TILJAK, I.

Situation and problems of production of stone for construction and maintenance of highways in Croatia. p. 363. CESTE I MOSTOVI. Zegreb. Vol. 3, No. 9, Sept. 1955

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, No. 2, Feb. 1956

GRODINSKIY, F.; KIIL, A.; KORP, A.; LINNAKIVI, J.; TILK, E.; VERNIK, L.; REHEMAA, H., red.; VEBER, H., tekhn. red.

Parnu. Tallinn, Eesti Riiklik Kirjastus, 1962. 7 p.
(Parnu--Views) (MIRA 16:3)

TIL'K, G.T.

Use of heat-setting refractory mortars for the laying of steel-smelting furnace walls. Ogneupory 29 no. 5:237-238 '64. (MIRA 17:7)

1. Verkh-Isetskiy metallurgicheskiy zavod.

TIL'K, L.G.

USSR/General and Special Zoology. Insects. Injurious In- P
sects and Ticks. Pests of Fruit and Berry Crops

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 49651

Author : Galetenko S.M., Til'k L.G.
Inst : State Nikita Botanical Garden
Title : An Experiment in the Control of the Lesser Apple Worm and Fruit Mites

Orig Pub : Byul. nauchno-tekhn. inform. Gos. Nikitsk. botan. sad, 1957, No 2, 29-31

Abstract : In 1954-1956, on thirty hectares of the garden in Belogorskiy Rayon were sprayed four times against the apple worm ad leaf-roller moth with a 0.2% DDT suspension (according to the active substance) from the time of birth of the first generation larvae. The damage to the fruits by the apple worm decreased 6-20 times, the quantity of removable fruit reached 76-89% and 46.2-54.4% of the total crop was of the first grade; the damage

Card : 1/2

USSR/General and Special Zoology. Insects. Injurious In- P
sects and Ticks. Pests of Fruit and Berry Crops

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 49651

to the removalbe crop by the leaf-rollers sharply decreased (to 2.6%). In 1954-1955, part of the gardens was sprayed three times against mites with chlorthane (1%). The effect of each spraying of the mites was apparent in 2-3 weeks. By August 10, the number of the hawthorn mites increased by 1.2 per leaf. In 1956, the first spraying with Merkaptophos (0.1%) was done during the insulation of the buds, and three-year treatment - during the control of the lesser apple worm - was done with ether sulfonate (0.3%). There were practically no mites during the summer. Because of the improvement in the quality of fruit, its price per 1 c. increased from 169 rubles in 1954 to 217.50 rubles in 1955, i.e., almost by 30%; with a crop of 72 c/ha., this increased the income from a garden by 100,000 rubles.

Card : 2/2

GALETENKO, S.M., agronom-entomolog; TIL'K, L.G.

Effectiveness of new chemical methods of controlling apple tree pests in the Crimea. Zashch. rast. ot vrd. i bol. 3 no.5:7-8 S-O '58. (MIRA 11:10)
(Crimea--Apple--Diseases and pests)

AUTHOR: Korobka, B. A.; Ovcharenko, V. I.; Sorokin, N. S.; Serebryakov, G. V.; Tulik, V. T.

TITLE: Ultrasonic surface cleaning of hot-rolled transformer steel

SOURCE: Stal', no. 12, 1964, 1127-1128

TOPIC TAGS: ultrasonic surface cleaning, atmospheric corrosion, magnetostriction generator, transformer steel

ABSTRACT: Annealed and pickled hot rolled sheets made of E41-E43 transformer steel display a tendency to form a silicon, aluminum, oxide, magnesium and calcium oxide surface films. An ultrasonic [illegible] was designed by the [illegible] engineers A. [illegible], V. [illegible], Mikhailov, O. F. [illegible]. An ultra-

Card 1/2

L 32908-65
ACCESSION NR: AP5000561

However, the wet surface of the sheets is subject to rapid oxidation requiring an immediate protective coating. Furthermore, across the width of the sheets the surface cleaning [illegible] suggest the development of 50 to 10000 kW generators [illegible] having a uniform field of acoustical emission. Orig. art. has: 1 figure.

ASSOCIATION: Ural'skiy n.-i institut chernykh metallov (Ural's Scientific Re-

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NR REF SOV: 001 OTHER: 000

Card 2/3

ABUSHIK, A.F.; NETSKAYA, A.I.; POZNER, V.M.; SHNEYDER, G.F.; TIL'KINA, K.F.; SAMOYLOVA, R.B.; SMIRNOV, R.F.; POLENOVA, Ye.N.; MANDEL'SHTAM, M.I.; LYUBIMOVA, P.S.

New genera and species of Ostracoda. Trudy VNIGRI no.115:232-299 '58. (MIRA 11:10)

(Ostracoda, Fossil)

TILKOVSZKY, Lorant, a tortenettudomanyok kandidatusa

Let us create flourishing life in Hungary! Elet tud 15 no.13a:387-390 27 Mr '60.

TILL, B.

Inventions and improvements are increasing the fighting ability of the Czechoslovak People's Army. p.80.
(Sbirka Vynalezu, Vol. 6, No. 4, Apr. 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

TILL, B.

The fighting fitness of the Czechoslovak army will be increased again.
p. 11.
(Ujitok Lapja, Vol. 9, no. 10, June 1957. Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 9, Sept. 1957. Uncl.

[redacted]renc; DOBOS, Sandor

Highly sensitive flame spectrophotometer. Magy kem folyoir 65 no. 7:257-260 Jl '59.

1. Eotvos Iorand Tudomanyegyetem Altalanos-es Szervetlen-Kemiai Intezete.

GARZO, Tamasne; TILL, Ferenc; TILL, Istvan

Gas chromatographic analysis of methyl-chlorine-silanes. Magy kem folyoir 68 no.8:327-333 Ag '62.

1. Eotvos Lorand Tudomanyegyetem Altalanos- es Szervetlen-Kemiai Tanszeke, Budapest, es Magyar Tudomanyos Akademia Szervetlen-Kemiai Kutatocsoportja.

TILL, F.; DOBOS, S.

Highly sensitive flame spectrophotometer. p. 257.

MAGYAR KEMIAI FOLYOIRAT. (Magyar Kemikusok Egyesulete) Budapest, Hungary, Vol. 65, no. 7, July 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, Jan. 1960.
UNCL

Till, Ferenc

GERM.

[illegible] (Leipzig) 203, 312–17(1954).—The ion emissivity of solid K-Na mixed glasses was detd. quantitatively at 470° as a function of the glass compn. A thin tube of the glass to be measured was surrounded by a cylindrical collecting cathode and heated electrically by Pt wires connected with the ends of the tubes, which were covered with a Pt layer. The anodic voltage was 200 v. The ion current varied from 2.5×10^{-7} amp./sq. cm. for pure K glass to 7.0×10^{-9} amp./sq. cm. for pure Na glass, having a marked min. of 0.19×10^{-9} amp./sq. cm. for a mol. ratio of K:Na = 1:... in the glass. The current, which is independent of the anodic voltage, was measured with a valve galvanometer. The cond. slope of the glasses investigated, which was also measured, is similar to that of the emissivity. Also in *Magyar Tudományos Akad. Kém. Tudományok Osztályának Közleményei* 5, 329–33(1954). Friedrich Epstein

DOBOS, Sandor; TILL, Ferenc

Investigation of factors influencing accuracy of determinations by flame photometers. Magy kem folvoir 67 no.4:183-188 Ap '61.

1. Eotvos Lorand Tudomanyegyetem Altalanos es Szervetlen Kemiai Tanszeke, Budapest.

DOBOS, Sandor; TILL, Ferenc

Examination of the factors affecting the accuracy of the determinations performed by flame photometry; a summary. Magy kem folyoir 66 no.12:526 D '60.

1. Eotvos Lorand Tudomanyegyetem Altalanos es Szervetlen Kemiai Intezete, Budapest.

MASSZI, F.:NEMETH, L.:SELLEI, C.:TILL, G.

Experiments with various mitosis and ferment inhibitory substances on Paramecia and on animal tumors. Kiserletes orvostud 4 no. 4: 248-255 Aug 1952. (CLML 23:5)

1. Doctor for Nemeth and Sellei. 2. Second Internal Clinic, Budapest Medical University.

LOVEI, Elemed, Dr.; MASSZI, Ferenc, Dr.; TILL, Gabriella, Dr.

Nanosomia. Gyermekgyogyaszat 9 no.12:361-370 Dec 58.

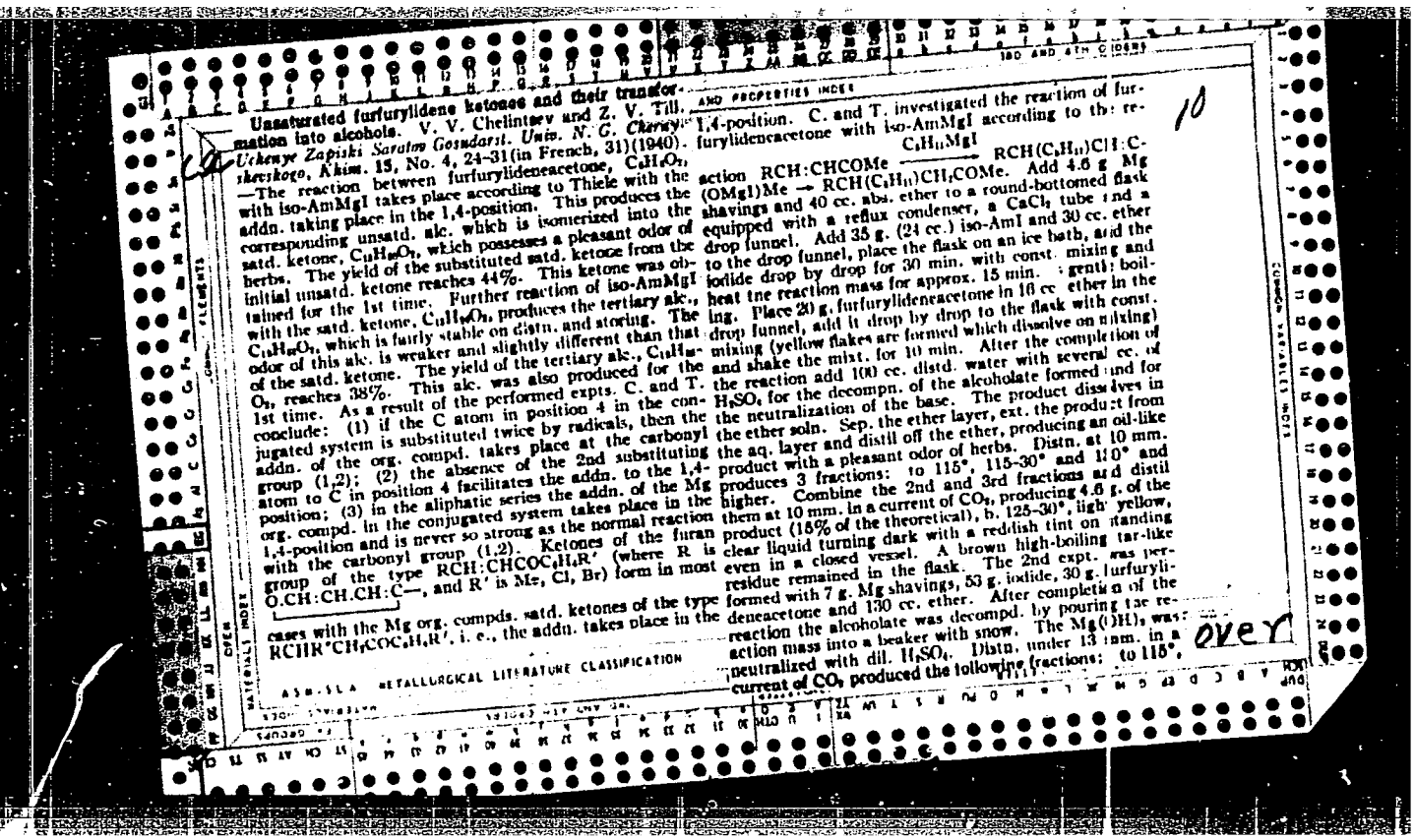
1. A Budapesti Orvostudomanyi Egyetem II. sz. Belklinika Janak Kozlemenye.

(DWARFISM
etiol. & hormone ther. (Hun))
(HORMONES, ther. use
dwarfism (Hun))

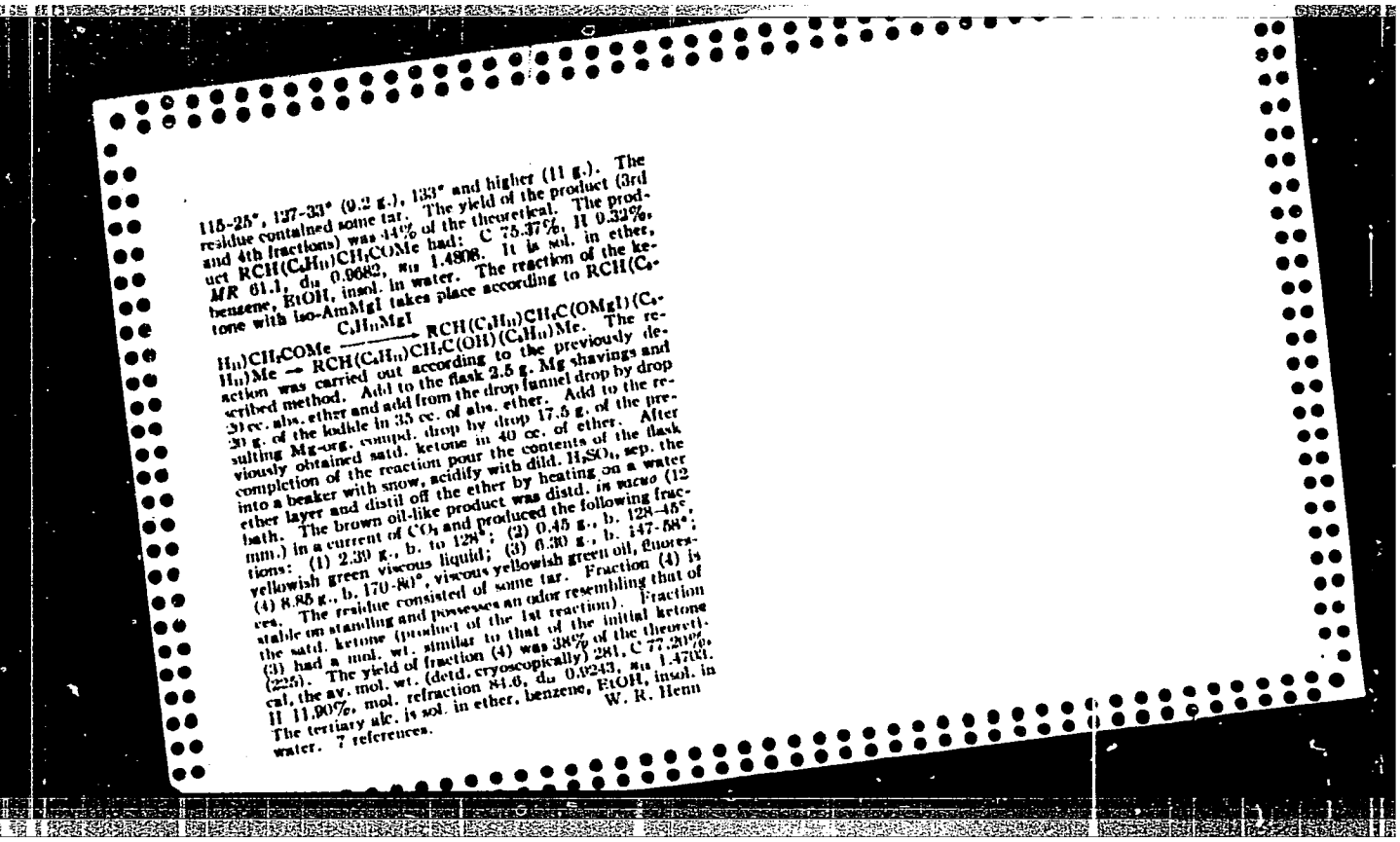
GARZO, Tamasne; TILL, Ferenc; TILL, Istvan

Gas chromatographic analysis of methyl-chlorine-silanes. Magy kem folyoir 68 no.8:327-333 Ag '62.

1. Eotvos Lorand Tudomanyegyetem Altalanos- es Szervetlen-Kemiai Tanszeke, Budapest, es Magyar Tudomanyos Akademia Szervetlen-Kemiai Kutatocsoportja.



Unsaturated furfurylidene ketones and their transformation into alcohols. V. V. Chelintsev and Z. V. Till. *Uchenye Zapiski Saratov Gosudarst. Univ. N. G. Chernyshevskogo, Khim.* 15, No. 4, 24-31(in French, 31)(1940). —The reaction between furfurylideneacetone, $C_8H_8O_2$, with iso-AmMgI takes place according to Thiele with the addn. taking place in the 1,4-position. This produces the corresponding unsatd. alc. which is isomerized into the satd. ketone, $C_{11}H_{20}O_2$, which possesses a pleasant odor of herbs. The yield of the substituted satd. ketone from the initial unsatd. ketone reaches 44%. This ketone was obtained for the 1st time. Further reaction of iso-AmMgI with the satd. ketone, $C_{11}H_{20}O_2$, produces the tertiary alc., $C_{16}H_{30}O_2$, which is fairly stable on distn. and storing. The odor of this alc. is weaker and slightly different than that of the satd. ketone. The yield of the tertiary alc., $C_{16}H_{30}O_2$, reaches 38%. This alc. was also produced for the 1st time. As a result of the performed expts. C. and T. conclude: (1) if the C atom in position 4 in the conjugated system is substituted twice by radicals, then the addn. of the org. compd. takes place at the carbonyl group (1,2); (2) the absence of the 2nd substituting atom to C in position 4 facilitates the addn. to the 1,4-position; (3) in the aliphatic series the addn. of the Mg org. compd. in the conjugated system takes place in the 1,4-position and is never so strong as the normal reaction with the carbonyl group (1,2). Ketones of the furan group of the type RCH:CHCOC$_4$H$_3$R' (where R is O.CH:CH.CH:C—, and R' is Me, Cl, Br) form in most cases with the Mg org. compds. satd. ketones of the type RCHR'CH$_2$COC$_4$H$_3$R', i. e., the addn. takes place in the 1,4-position. C. and T. investigated the reaction of furfurylideneacetone with iso-AmMgI according to the reaction RCH:CHCOMe $\xrightarrow{C_5H_{11}MgI}$ RCH(C$_5$H$_{11}$)CH$_2$COMe. Add 4.6 g Mg (OMgI)Me → RCH(C$_5$H$_{11}$)CH$_2$COMe. shavings and 40 cc. abs. ether to a round-bottomed flask equipped with a reflux condenser, a $CaCl_2$ tube and a drop funnel. Add 35 g. (24 cc.) iso-AmI and 30 cc. ether to the drop funnel, place the flask on an ice bath, and the iodide drop by drop for 30 min. with const. mixing and heat the reaction mass for approx. 15 min. gently boiling. Place 20 g. furfurylideneacetone in 10 cc. ether in the drop funnel, add it drop by drop to the flask with const. mixing (yellow flakes are formed which dissolve on mixing) and shake the mixt. for 10 min. After the completion of the reaction add 100 cc. distd. water with several cc. of H_2SO_4 for the decompn. of the alcoholate formed and for the neutralization of the base. The product dissolves in the ether soln. Sep. the ether layer, ext. the product from the aq. layer and distil off the ether, producing an oil-like product with a pleasant odor of herbs. Distn. at 10 mm. produces 3 fractions: to 115°, 115-30° and 130° and higher. Combine the 2nd and 3rd fractions and distil them at 10 mm. in a current of CO_2, producing 4.6 g. of the product (15% of the theoretical), b. 125-30°, light yellow, clear liquid turning dark with a reddish tint on standing even in a closed vessel. A brown high-boiling tar-like residue remained in the flask. The 2nd expt. was performed with 7 g. Mg shavings, 53 g. iodide, 30 g. furfurylideneacetone and 130 cc. ether. After completion of the reaction the alcoholate was decompd. by pouring the reaction mass into a beaker with snow. The $Mg(OH)_2$ was neutralized with dil. H_2SO_4. Distn. under 13 mm. in a current of CO_2 produced the following fractions: to 115°,



115-25°, 127-33° (0.2 g.), 133° and higher (11 g.). The residue contained some tar. The yield of the product (3rd and 4th fractions) was 44% of the theoretical. The product $RCH(C_4H_{11})CH_2COMe$ had: C 75.37%, H 0.32%, MR 61.1, d_4 0.9682, n_D 1.4808. It is sol. in ether, benzene, EtOH, insol. in water. The reaction of the ketone with iso-AmMgI takes place according to $RCH(C_4H_{11})CH_2COMe \xrightarrow{C_4H_{11}MgI} RCH(C_4H_{11})CH_2C(OMgI)(C_4H_{11})Me \rightarrow RCH(C_4H_{11})CH_2C(OH)(C_4H_{11})Me$. The reaction was carried out according to the previously described method. Add to the flask 3.5 g. Mg shavings and 30 cc. abs. ether and add from the drop funnel drop by drop 30 g. of the iodide in 35 cc. of abs. ether. Add to the resulting Mg-org. compd. drop by drop 17.5 g. of the previously obtained satd. ketone in 40 cc. of ether. After completion of the reaction pour the contents of the flask into a beaker with snow, acidify with dild. H_2SO_4, sep. the ether layer and distil off the ether by heating on a water bath. The brown oil-like product was distd. in vacuo (12 mm.) in a current of CO_2 and produced the following fractions: (1) 2.39 g., b. to 128°; (2) 0.45 g., b. 128–45°, yellowish green viscous liquid; (3) 6.30 g., b. 147-68°; (4) 8.85 g., b. 170-80°, viscous yellowish green oil, fluoresces. The residue consisted of some tar. Fraction (4) is stable on standing and possesses an odor resembling that of the satd. ketone (product of the 1st fraction). Fraction (3) had a mol. wt. similar to that of the initial ketone (225). The yield of fraction (4) was 38% of the theoretical, the av. mol. wt. (detd. cryoscopically) 281, C 77.20%, H 11.90%, mol. refraction 84.6, d_4 0.9243, n_D 1.4781. The tertiary alc. is sol. in ether, benzene, EtOH, insol. in water. 7 references.

W. R. Henn

TILLAI, Erno

Large-panalled dwelling houses at Pecs. Pecsi szeml 7 n o.2/3:30-32 Ap-S '62.

1. Epitesugyi Miniszterium Pecsi Tervezo Vallalat.

S/844/62/000/000/082/129
D423/D307

AUTHORS: Usmanov, Kh. U., Tillayev, R. S. and Musayev, U. N.

TITLE: Copolymerization and grafting of sylvan under the action of γ radiation

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 484-489

TEXT: Copolymers of acrylonitrile and sylvan were obtained by the action of γ radiation from Co^{60} on various mixture ratios in sealed glass ampoules. It was shown that the yield of copolymer increased with increasing dosage and also with increasing acrylonitrile content. Physicochemical tests established that the copolymer consisted of soluble and insoluble portions. Chemical analysis and investigation of the ir spectra established the presence of nitrogen and the fact that it influenced the formation of copolymers. Investigation of the thermomechanical properties showed that the copolymers can exist in all three physical states. Radiation polymerization

Card 1/2

of sylvan only took place in the presence of sensitizing solvents such as CCl_4 and $CHCl_3$. This was explained by the formation of free radicals by the solvents, thus initiating polymerization. Grafting polymerization was studied by using chlorinated polyvinyl chloride (perchlorvinyl) with a molecular weight of 51,640 and a chlorine content of 62.3%, mixed with sylvan in sealed glass ampoules and subjected to a γ dosage of 1 - 1.5 Mr. The results showed that in order to reduce the quantity of homopolymer formed the system must be chosen such that the basic polymer is more radiation-sensitive than the grafting monomer. Study of the physical properties of the grafted polymers obtained from sylvan and perchlorvinyl showed that lacquers were formed in a mixture of acetone and dichlorethane, which are stable to bending and to shock and which are also hydro-stable. There are 4 figures and 2 tables.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina, khimicheskiy fakul'tet (Tashkent State University im. V. I. Lenin, Faculty of Chemistry)

TOPIC TAGS: acrylonitrile, sylvan, radiation polymerization, polyacrylonitrile, Ansyl copolymer

ABSTRACT: Acrylonitrile was [illegible] terms (present in various [illegible]

[illegible]

cule. As the proportion of acrylonitrile in the [illegible] increased, the

L 60142-65
ACCESSION NR: AT5019596

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[illegible] AN [illegible] to the mixture of monomers in methylformamide (DMF), acetone, methanol, and CCl4 to the mixture of monomers in amounts up to 25 vol.% increases [illegible] 55% in the case of acetone, from 16 to 80% in the case of DMF, and to 57 and 91% in [illegible] swelling and [illegible]

linking. Orig. art. has: 7 figures and 4 tables.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 ENCL: 00

NO REF SOV: 003 OTHER: 001

Card 2/2

USMANOV, Kh.U.; TILLAYEV, R.S.; MUSAYEV, U.N.; KURBANOV, Sh.A.

Radiation-induced grafting of methacrylic acid into butadiene rubber. Nauch.trudy TashGU no.257.Khim.nauki no.12:22-25 '64. (MIRA 18:8)

USMANOV, Kh.U.; TILLAYEV, R.S.; MUSAYEV, U.N.; ISHANOV, M.M.

Polymerization and copolymerization of methacrylic acid with methacrylamide under the effect of γ-rays. Nauch.trudy TashGU no.257.Khim.nauki no.12:30-43 '64. (MIRA 18:8)

USMANOV, Kh.U.; TILLAYEV, R.S.; TASHMUKHAMEDOV, S.A.

Radiation-induced grafting of vinyl acetate into perchlorovinyl.
Nauch.trudy TashGU no.257.Khim.nauki no.12:26-29 '64.
(MIRA 18:8)

USMANOV, Kh.U.; TILLAYEV, R.S.; MUSAYEV, U.N.

Density of graft copolymers obtained by radiation. Vysokom. soed. 7 no.8:1310-1313 Ag '65. (MIRA 18:9)

1. Tashkentskiy gosudarstvennyy universitet imeni V.I.Lenina.

TILLAYEV, R.S.

37292
S/190/62/004/006/019/026
B110/B138

15.8620

AUTHORS: Usmanov, Kh. U., Larin, P. P. Tashpulatov, Yu. T., Musayev, U. N., Tillayev, R. S.

TITLE: The IR spectra of graft copolymers of polystyrene and perchlorovinyl with acrylonitrile, obtained under γ-radiation

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 6, 1962, 907-912

TEXT: The IR spectra were investigated for the graft copolymers of polystyrene with acrylonitrile (PSA) and perchlorovinyl with acrylonitrile (PCA), obtained by γ-radiation. The graft copolymers were prepared according to the authors (Mezhdunarodnyy simpozium po makromolekulyarnoy khimii (International Symposium on Macromolecular Chemistry), Moskva, iun' 1960 g. sektsiya III, p. 270). The radiation dose was 1 - 10,000,000 roentgen. For spectral analysis KBr compacts were produced. A double-beam IR spectrophotometer type IKS-14 (IKS-14) was used with NaCl prism for 2.5 - 15μ. Homopolymerization of acrylonitrile and graft copolymerization with polystyrene takes place during graft copolymerization. Since the spectrum of the graft copolymer differed from that of the initial

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The IR spectra of graft...

polymer, grafting of polyacrylonitrile and polystyrene presumably occurred during irradiation. The graft copolymer of polystyrene with acrylonitrile corresponded to oscillations at: 2.86 - 2.94μ to hydrogen bond (N.....H); 3.28 and 3.32μ - asymmetric oscillations of the CH_2 group; 3.43 and 3.52μ - valency oscillations of the CH_2 group; 4.45μ - C≡N valency oscillations; 5.13, 5.31 and 5.53μ - harmonics of the monosubstituted benzene ring; 5.98μ - C=O valency oscillations; 6.24μ - oscillations of the C=C bond of the benzene ring; 6.69μ - oscillation of the benzene ring; 6.87, 7.09, 7.20μ - deformation oscillations of the CH_2 group; 7.94μ - C-H deformation oscillations; 8.44, 8.66μ - oscillations of the monosubstituted benzene ring; 9.13, 9.34μ - C-C skeleton oscillations; 10.99, 11.80μ - CH oscillations of the monosubstituted benzene; 13.16, 14.28μ - non-flat deformation oscillations of the CH group of the monosubstituted benzene ring. The insolubility of the copolymer (C = 73.77%, H = 6.81%, N = 13.47%, O = 5.95%) is explained by: (1) grafting, (2) appearance of new bonds (2.86 - 2.94μ N....H hydrogen bond). For the graft copolymer of perchlorovinyl and acrylonitrile, there corresponded the bands: 2.91μ to NH valency oscillations in the NH_2 group; 3.39μ - C-H deformation oscillations;

Card 2/3

The IR spectra of graft...

5.81μ = C=O valency oscillations; 7.03μ = CH_2 deformation oscillations; 7.37, 9.83μ = C≡N valency oscillations; 10.39μ = C-C skeleton oscillations; 13.17μ = C-Cl valency oscillations; 14.80μ = C-H deformation oscillations. The appearance of the band at 2.91, 5.81, 7.37 and 9.83μ presumably proves saponification of the C≡N to the O=C-NH_2 group owing to HCl separation and air humidity. For the graft copolymer of perchlorovinyl with acrylonitrile the following oscillations appear: 3.40μ = CH_2 valency oscillations, 4.42μ = C≡N valency oscillations; 5.99μ = C=O valency oscillations; 6.67, 6.87μ = CH_2 deformation oscillations; 7.19, 7.36, 7.94 and 8.36μ = C-H deformation oscillations; 9.13, 9.34μ = -C-C-C- skeleton oscillations; 13.10μ = C-Cl valency oscillations. There are 2 figures.

ASSOCIATION: Institut khimii polimerov AN UzSSR (Institute of the Chemistry of Polymers AS UzSSR). Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina (Tashkent State University imeni V. I. Lenin)

SUBMITTED: April 14, 1961

Card 3/3

L 16171-66 EWT(m)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) WW/GG/RM

ACC NR: AP5025431 SOURCE CODE: UR/0291/65/000/004/0040/0044

AUTHOR: Usmanov, Kh. U.; Tillayev, R. S.; Tashmukhamedov, S. A.

72
B

ORG: Tashkent State University im. V. I. Lenin (Tashkentskiy gosuniversitet)

TITLE: Radiation grafting of styrene and methylmethacrylate on chlorinated poly(vinyl chloride).

SOURCE: Uzbekskiy khimicheskiy zhurnal, no. 4, 1965, 40-44

TOPIC TAGS: polymer, irradiation, polyvinyl chloride, styrene, methylmethacrylate, thermomechanical property, elasticity, gamma ray

ABSTRACT: To avoid oxidative destruction, the authors applied the direct method of simultaneous irradiation of the polymer and the monomer in the absence of oxygen. The chlorinated poly(vinyl chloride) (I), η 0.80 in $(CH_2Cl)_2$ at 25C, styrene (II), and Me methacrylate (III) were additionally purified from any traces of admixtures. The experiments were carried out as follows. To powdered I in an ampul was added II or III, respectively, the ampul was evacuated by the usual

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L 16171-66

ACC NR: AP5025431

method of freezing and melting, at 10^{-3} - 10^{-4} mm, sealed in vacuo, and irradiated by γ-rays (^{60}Co) in doses of 0.25-6.0 mr, intensity 200 r/sec. The experimental results (dose, ratio I-II or I-III, weight gain after extraction of monomer, II- or III-content in the copolymer, and % yield of the final product) are given. Owing to the resistance of the benzene nucleus, graft copolymerization of II requires higher radiation doses than that of III. Determinations of thermo-mechanical properties of the copolymers showed that grafting II or III onto I results in a decrease of the Mackian elasticity region of I. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 07 / SUBM DATE: 05Feb65/ ORIG REF: 005/ OTH REF: 003

Card 2/2

ACCESSION NR: AP4040479 S/0190/64/006/006/0997/1000

AUTHOR: Larin, P. P.; Musayev, U. N.; Tashpulatov, Yu. T.; Tillayev, R. S.; Usmanov, Kh. U.

TITLE: IR spectra of copolymers of acrylonitrile and 2-methylfuran

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 6, 1964, 997-1000

TOPIC TAGS: copolymer, acrylonitrile, furan. 2-methyl, copolymer Ansil, radiation induced copolymerization, bulk copolymerization, solution copolymerization

ABSTRACT: The IR spectra of acrylonitrile--2-methylfuran (Ansil') copolymers have been studied. The copolymers were prepared by irradiating mixtures of the pure monomers both in bulk and in various solvents from a Co^{60} source. The study has confirmed the formation of copolymers. From the results it was assumed that in radiation-induced copolymerization of acrylonitrile and 2-methylfuran in solution, solvent molecules add to the ends of the copolymer molecules and accelerate termination. This assumption was confirmed by the fact that "Ansil'" copolymers prepared in solution have a lower molecular weight than those bulk copolymerized.

Card 1/2

ACCESSION NR: AP4040479

The addition of the solvent is probably accompanied by a partial cyclization of polyacrylonitrile segments to form conjugated C=N bonds. Orig. art. has 2 figures.

ASSOCIATION: Institut khimii polimerov AN UzSSR(Institute of Polymer Chemistry, AN UzSSR); Tashkentskiy gosudarstvenny*y universitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 25May63 ENCL: 00 SUB CODE: OC, MC

NO REF SOV: 003 OTHER: 001

Card 2/2

ACCESSION NR: AT4042432 S/3103/64/000/002/0175/0182

AUTHOR: Usmanov, Kh. U., Tillayev, R. S., Musayev, U. N., Yuldasheva, Kh.

TITLE: Thermomechanical properties and plasticizing of grafted copolymers obtained by radiation polymerization

SOURCE: AN UzSSR. Institut khimii polimerov. Khimiya i fiziko-khimiya prirodny*kh i sinteticheskikh polimerov, no. 2, 1964, 175-182

TOPIC TAGS: grafted copolymer, acrylonitrile, polystyrene, polyvinylchloride, vinyl perchloride, glass temperature, Gamma-irradiation, plasticizer, saponified copolymer, radiation polymerization, polymer plasticizing, polymer thermomechanical property

ABSTRACT: A study of the thermomechanical properties of grafted copolymers obtained by grafting acrylonitrile on polystyrene, polyvinyl chloride and vinyl perchloride showed that the glass temperature T_c of these copolymers, regardless of the ratio of the components, corresponds essentially to the glass temperature of the initial polymers, but that the flow temperature T_t lies above the temperature of chemical stability of the products. Copolymers, as compressed tablets (3-4 mm thick and 7 mm in diameter), were tested before and after irradiation at doses of 1-10 Mr. The thermomechanical curves were plotted with the dynamometric scales of Kargin and Sogolova at a constant load for 10 sec., at a specific

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ACCESSION NR: AT4042432

load of 1.4 kg/cm^2. The curves obtained for all the copolymers, with or without plasticizers were quite similar, and showed less effect of temperature than on pure polymers. Tabulated irradiation data showed that the thermomechanical properties of grafted copolymers remain almost unchanged under the influence of irradiation. This indicates the greater stability of grafted copolymers to γ-rays as well as to high temperatures. The flow of grafted copolymers is therefore considered to be almost independent of grafting. An investigation of the plasticizing of grafted copolymers showed that grafted copolymers synthesized from two homopolymers which have a common plasticizer remain unchanged in their compatibility with this plasticizer. For grafted copolymers containing, on the one hand, chains able to plasticize (polystyrene, polyvinyl chloride) and, in the other component, unplasticizable rigid chains (polyacrylonitrile), the compatibility with the plasticizer is low and limited. The change in thermomechanical properties (decrease in Tc) with increasing plasticizer concentration (tetralin or methylbenzoic ether) is plotted. In addition, analytical data for nitrogen content and acid number of the grafted copolymers are tabulated. The thermomechanical curves of saponified vinyl perchloride and polyacrylonitrile grafted copolymers showed that the glass temperature is decreased and the plasticity is increased by saponification. A further increase in plasticity is produced by plasticizers, especially glycerol. Such an increase could never be obtained by plasticizing unsaponified grafted copolymers. Orig. art. has: 2 tables and 3 figures.

Card 2/3

ACCESSION NR: AT4042432

ASSOCIATION: Institut khimii polimerov AN UzSSR (Institute of Polymer Chemistry, AN UzSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: OC NO REF SOV: 006 OTHER: 000

Card 3/3

33121

S/638/61/001/000/051/056
B125/B104

15.8620

AUTHORS: Usmanov, Kh. U., Tillayev, R. S., Musayev, U. N., Tursunov, D.

TITLE: Polymerization and synthesis of graft polymers from natural rubber and from polystyrene by gamma irradiation

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961, 298-302

TEXT: The synthesis of graft polymers from natural rubber with vinyl chloride and from polystyrene with acrylonitrile and their properties were studied and the synthesis of homopolymers by radiation polymerization of acrylonitrile, vinyl chloride, and furfuryl alcohol have been investigated. The radiation polymerization of ethylene and of vinyl polymers was studied at the laboratory of the Academician S. S. Medvedev and by A. Shapiro (Khimiya i tekhnologiya polimerov, 1,1,1958). Regnier's method (Petrov, G. K., Tekhnologiya sinteticheskikh smol i plasticheskikh mass (Technology of synthetic resins and plastics), M.-L., Goskhimizdat, 1946,

Card 1/4 3

Polymerization and synthesis ...

p. 329) was used to obtain vinyl chloride, from chemically pure dichloro ethane by Co^{60} gamma irradiation of $0.5 \cdot 10^6$-$5 \cdot 10^6$ r. Ampoules filled with a mixture of natural rubber and vinyl chloride were irradiated at the laboratoriya Fiziko-tekhnicheskogo instituta AN UzSSR (Laboratory of the Physicotechnical Institute, AS Uzbekskaya SSR). The polymer resulting from gamma irradiation is not soluble, but swells slightly in some solvents (benzene, toluene, carbon tetrachloride, methylene chloride) and some solvent mixtures. The polymer obtained by grafting and irradiation has a more strongly ramified chain than the original rubber with a netlike structure resistant to solvents. The maximum amount of absorbed liquid per gram of polymer and the swelling rate constant drop a little with increasing dose. The data contained in the figure were recorded with a dynamometric balance of V. A. Kargin and T. I. Sogolova (ZhFKh, 1949, 23, 5, 530). All graft polymers from natural rubber and vinyl chloride are more heat-resistant than the initial rubber. The mechanical properties and the electrical insulating quality of additionally vulcanized grafted rubber meet the ГОСТ (GOST) requirements on insulating rubber for the cable industry. The graft polystyrene polymer with acrylonitrile was produced by gamma irradiation ($1 \cdot 10^6$-$4 \cdot 10^6$ r) of a swelled polystyrene film. The amount of nonreacting polystyrene and of the copolymer drops

with increasing radiation dose. The thermal resistivity of the initial and of the graft polymer is increased by the grafting of polystyrene with acrylonitrile. In addition, the graft polymer is more resistant to solvents than the initial polymer. Irradiation of acrylonitrile and vinyl chloride (starting material for the production of graft polymers) yielded polyacrylonitrile, polyvinyl chloride, and polyfurfuryl alcohol. There are 1 figure, 1 table, and 9 references: 3 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: Ballantine D. S., Mod. Plastics., 35, 171, 1957; Chapiro A. I., Polym. Sci., 29, 120, 321, 1958; Hammon H. G., S. P. E. Journal, 14, N3, 40, 1958.

ASSOCIATION: Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University imeni V. I. Lenin)

Fig. Deformation as a function of temperature. Legend: (1) natural rubber; (2) natural rubber + vinyl chloride, dose $1 \cdot 10^6$ r; (3) natural rubber + vinyl chloride, dose $2 \cdot 10^6$ r; (4) polystyrene; (5) polystyrene + acrylonitrile, dose $4 \cdot 10^6$ r; (A) deformation.

USMANOV, Kh.U.; TILLAYEV, R.S.; MUSAYEV, U.N.

Graft polymers produced from natural rubber. Uzb. khim. zhur. no.3:20-23 '59. (MIRA 12:9)

1.Sredneaziatskiy gos.universitet im. V.I. Lenina. 2.Chlen-korrespondent AN UzSSR (for Usmanov).
(Polymers) (Rubber)

USMANOV, Kh.U.; TILLAYEV, R.S.; MIRSALIKHOV, M.

Variations in the polymerization degree of cellulose in the cotton fiber as related to insolation. Dokl. AN Uz. SSR no.8:17-19 '58. (MIRA 11:9)

1.Sredneaziatskiy gosudarstvennyy universitet im. V.I. Lenina.
2.Chlen-korrespondent AN UzSSR (for Usmanov).
(Cellulose) (Polymerization) (Plants, Effect of light on)

TILLAYEV, R. S.

USSR/Analytical Chemistry - Analysis of Organic Substances G-3

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 8584

Author : Usmanov, Kh. U., Yakubov, A. M., and Tillayev, R. S.
Inst : Academy of Sciences, Uzbek SSR
Title : Determination of Organic Acids by Paper Partition Chromatography

Orig Pub : Dokl. An UzSSR, 1956, No 5, 23-25 (with Uzbek summary)

Abstract : The adsorption of organic acids during partition chromatography on paper causes the formation of "comets" (the acids do not move in narrow bands but trail each other) which complicates the identification of the acids. The addition of small amounts of a volatile acid (e.g., CHOOH or CH_3COOH) to the mobile phase markedly decreases the adsorption and reduces the effect of the concentration on the retention time. The possibility of making chromatographic identification and quantitative estimation organic acids has been established by the determination of 46 acids of the aliphatic and aromatic series (using a water-saturated solution of n-butyl alcohol containing 5% CHOOH as the solvent, and a 0.04% solution of bromocresol

Card 1/2 -46-

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 8584

blue in alochol as the developing agent). Rosolic, picric, and aminopicric acids do not require a developer for their qualitative determination since they form characteristic coloured spots.

TASHMUKHAMEDOV, S.A.; TILLAYEV, R.S.; USMANOV, Kh.U.; LATYPOV, T.

Grafting of methyl methacrylate into butyl rubber under the effect of gamma rays. Uzb. khim. zhur. 9 no.5:59-62 '65.
(MIRA 18:12)

1. Tashkentskiy gosudarstvennyy universitet imeni Lenina.
Submitted Feb. 5, 1965.

L 23710-66 EWT(m)/EPF(n)-2/EWP(j)/T/EWA(h)/ETC(m)-6/EWA(l) IJP(c)
ACC NR: AP6003693 SOURCE CODE: UR/0291/65/000/005/0059/0062
WW/GG/RM

AUTHOR: Tashmukhamedov, S. A.; Tillayev, R. S.; Latypov, T.; Usmanov, Kh. U. (Corresponding member AN UzSSR)

ORG: Tashkent State University im. V. I. Lenina (Tashkentskiy gosuniversitet)

TITLE: Grafting of methyl methacrylate to butyl rubber under the influence of gamma radiation

SOURCE: Uzbekskiy khimicheskiy zhurnal, no. 5, 1965, 59-62

TOPIC TAGS: gamma irradiation, irradiation effect, graft copolymer, butyl rubber, polymethyl methacrylate, methylmethacrylate, polymer, monomer

ABSTRACT: Graft copolymers of butyl rubber (copolymer of isobutylene with 2.0-3.0% isoprene) with methyl methacrylate were synthesized radiochemically by simultaneously irradiating a mixture of the polymer and monomer in the absence of atmospheric oxygen with Co^{60} gamma rays. After extraction of the polymethyl methacrylate homopolymer (PMMA), the degree of grafting and yield of the graft copolymer decreased with increasing irradiation dose for a polymer-to-monomer ratio of 1:1 and 1:0.6, and also in the solvent dichloroethane. The copolymers formed had a variable composition; their formation was confirmed by turbidimetric titration. A study of the kinetics of swelling of the copolymers in various liquids showed that the nature of the side chain in the

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L 23710-66
ACC NR: AP6008693

graft copolymer causes a decrease in the affinity of the system obtained for some liquids and an increase for others. A study of the viscosity of solutions of the graft copolymers in benzene at 30°C revealed that as the content of graft PMMA in the copolymer diminishes (with rising irradiation dose), the intrinsic viscosity of the solutions decreases. This is attributed not only to a drop in the proportions of graft PMMA in the copolymer but also to the degradation of macromolecules of the initial polymer under the influence of gamma radiation. Orig. art. has: 2 figures, 1 table.

SUB CODE: 07/ SUBM DATE: 05Feb65/ ORIG REF: 002/ OTH REF: 002

Card 2/2

TILLAYEV, R.

The carbohydrate composition of cotton fibers as determined by chromatography. Kh. U. Usmanov and R. Tillaev. *Doklady Akad. Nauk Uzbek. S.S.R.* 1953, No. 11, 25-6; *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 12565.— Fibers of cotton (variety 108-F) contain glucose and fructose but no other sugars. B. S. Levine

MD (1)

TILLAYEV, R.

USSR.

Cathodic and anodic behavior of an iron electrode in a concentrated solution of alkali in the presence of a passivator. A. Murtazaev and R. Tillaev. *Doklady Akad. Nauk Uzbek. S.S.R.* 1953, No. 9, 24-7; *Referat. Zhur., Khim.* 1954, No. 23201.—The behavior of Fe electrodes was studied polarographically in alk. solns. contg. addns. of CrO_4^{--}. Passivation of Fe was highest at a CrO_4^{--} content of 0.2%. Further increase in concn. had no effect. The presence of CrO_4^{--} in the alk. soln. shifted the potential of the Fe electrode toward the pos. side and it also slowed the evolution of H at the cathode. At a CrO_4^{--} concn. of 0.5%, the overvoltage of H at high c.d. increased by 90 mv. M. Hoseh

TILLAYEV, R.

USSR.

Assimilation of carbonates by the leaves of cotton plants. Kh. U. Usmanov, V. I. Dulova, R. Tillaev, and L. A. Vvedenskaya. *Doklady Akad. Nauk Uzbek. S.S.R.* 1953, No. 9, 22-3; *Referat. Zhur., Khim.* 1954, No. 25486.—During the flowering time 2 leaves of cotton plant were immersed into aq. solns. contg. C^{14}. The leaves were then immersed into an alk. soln. for 5 hrs. daily during 13 days followed by the detn. of their radioactivities while still on the plant. One month after the immersion of the leaves into the solns. contg. C^{14} the entire plant was analyzed for radioactivity. It was found that the amt. of C^{14} was highest at the place where the isotope was introduced into the plant; C^{14} was also found in the pods, stalks, and roots. Consequently, cotton plants can utilize CO_3^{--} when added through the leaves. E. Wierbicki

L 60144-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(1) Pc-4, Pr-4/
Pab/Pi-L WW/AJ/RM

chemistry), 22-25

TOPIC TAGS: radiation polymerization, methacrylic acid, butadiene rubber, graft copolymer

ABSTRACT: The grafting of methacrylic acid to butadiene rubber (SKB) was carried out in sealed glass ampoules in the presence of air by exposing the mixtures to Co^{60} gamma radiation. The degree of grafting increases with the irradiation dose and monomer concentration in the initial mixture. However, as the monomer concentration rises above 50%, the amount of the homopolymer increases, reducing the degree of grafting. The latter is also reduced by an increase in the irradiation rate from 19 to 500 r/sec; this is apparently due to the fact that the free radicals combine

Card 1/2

L 60144-65

ACCESSION NR: AT5019598

degree of grafting (an increase from 80 to 92% in [illegible] yield). However, addition of 30-40% [illegible] [illegible]
[illegible]
ture of the rubber jumped from -40 to +200-220°C, and its deformability declined markedly. This is apparently due to an increase in the rigidity of the chains and to cross-linking of the chains of the grafted rubber under the influence of gamma radiation. A study of the homopolymerization kinetics of methacrylic acid showed that the yield of polymethacrylic acid rises with increasing irradiation dose, but this is associated with [illegible]

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 001 OTHER: 004

Card 2/2

L 60145-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) Pc-4/Pr-4/Peb/
Pu-4 GG/JAJ/TH

ACCESSION NR: AT5019599 UR/3021/64/000/257/0023/0029

AUTHOR: Usmanov, Kh. U.; Tillayev, R. S. (Docent); Tashmukhamedov, S. A.

TITLE: Radiation grafting of vinyl acetate to perchlorovinyl

SOURCE: Tashkent. Universitet. Nauchnyye trudy, no. 257, 1964. Fiziko-khimiya polimerov i neorganicheskaya khimiya (Physical chemistry of polymers and inorganic chemistry), 26-29

TOPIC TAGS: vinyl acetate, perchlorovinyl, graft copolymer, radiation polymerization

ABSTRACT: Powdered perchlorovinyl (chlorinated polyvinyl chloride) and various amounts of vinyl acetate were sealed in glass ampoules in the absence of air and subjected to Co^{60} gamma irradiation in doses of $0.25-2.0 \cdot 10^6$ r at a rate of 200 r/sec. For all polymer-to-monomer ratios, the increase in the weight of the initial polymer and hence, the degree of grafting, i.e., the ratio of the weight increase to the weight of the initial polymer [illegible] decreases because of an increase in the vinyl acetate homopolymer.

Card 1/2

L 60145-65

ACCESSION NR: AT5019599

point and glass-transition temperature of the copolymers are depressed. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina (Tashkent State University)

L 60106-65 EWT(1)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/EWA(h)/EWA(l) Pc-4/Pr-4/Peb/
Pu-4 ES/GAS/RM

AUTHOR: Usmanov, Kh. U.; Tillayev, K. S. (Docent); Musayev, U. N.; Ismailov, M. M.

TITLE: Polymerization and copolymerization [illegible] with methacrylamide under the influence of gamma radiation

SOURCE: Tashkent. Universitet. Nauchnyye [illegible], 1964. Fizika-khimiya [illegible] chemistry], 30-40

TOPIC TAGS: methacrylic acid, methacrylamide, radiation polymerization

ABSTRACT: The study consisted of three parts: (1) radiation polymerization of methacrylic acid; (2) radiation polymerization of methacrylamide; (3) radiation copolymerization of methacrylic acid with methacrylamide. In each case, the yields and properties of the polymers depended on the dose, irradiation rate, and irradiation time. Optimum conditions for obtaining the methacrylic acid-methacrylamide copolymer were a dose of 350-400 thousand r at a rate of 200 r/sec and a 50:50 monomer ratio in the presence of 50% water. The physicochemical and thermomechanical properties of the copolymers were studied. It was shown that the molecular weight

Card 1/2

L 60116-65

ACCESSION NR: AP5...

and density of the copolymer are higher than the average values for the constituent homopolymers. The copolymers and homopolymers have no highly elastic or viscofluid state, ...

composition temperatures of the two homopolymers. Characteristic infrared bands of the copolymer were identified. Preliminary studies of the copolymer indicate that it is a good structure-forming agent for clay mortar. Orig. art. has: 4 figures and 8 tables.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina (Tashkent State University)

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

NO REF SOV: 008 OTHER: 003

Card 2/2

TILLAYEV, R.S.

A study of the cotton fiber in the initial stage of development. Kh. U. Usmanov, T. I. Sushkevich, and R. S. Tillaev (Inst. Chem. Acad. Sci. Uzbek S.S.R., Tashkent). *Fiziol. Rastenii, Akad. Nauk S.S.S.R.* 2, 368-63(1955).—Local application of $C^{14}O_2$ to leaves by means of a movable glass chamber was used for a study of the nature of the process of fiber development in a cotton plant. Carbohydrate content of the cotton fiber revealed that in the early stage pod glucose and fructose are present. It is suggested that cellulose synthesis begins and ends in the same cotton filament directly from the monosaccharides present in it. A sharp decline in monosaccharides occurs at 15–30 days after flowering, depending on the variety of the plant. These periods are those of sugar "starvation" which must be overcome in order that the crop yield be raised. The most rapid accumulation of cellulose matter and decline of simple carbohydrates occurs in the early stage of fiber formation; relatively low mol. material is present at this stage indicating the probability of a polycondensation mechanism, rather than a polymerization mechanism for the formation of cellulose.

G. M. Kosolapoff

(2)

LARIN, P.P.; [illegible], U.I.; TASHPULATOV, Yu.T.; TILLAYEV, R.S.; [illegible], Kh.P.

Infrared spectra of copolymers of acrylonitrile and α-methylfuran. Vysokom. soed. 6 no.6:997-1000 Je '64 (MIRA 18:2)

1. Institut khimii polimerov AN UzSSR i Tashkentskiy gosudarstvennyy universitet imeni Lenina.

USMANOV, Kh.U.; TILLAYEV, R.S.; MUSAYEV, U.N.; KURBANOV, Sh.A.

Radiation-induced grafting of acrylonitrile into polyvinyl alcohol. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 207-214 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

TILLAYEV, R. S.

2.

Z Radiochromatographic method in chemical investigation of cotton. Kh. U. Usmanov and R. S. Tillaev. *Trudy Komissii Anal. Khim., Akad. Nauk S.S.S.R., Inst. Geokhim. i Anal. Khim.* 6, 498–501(1955); cf. Rachinskii, *et al.*, *C.A.* 47, 7578*i*.—According to chromatographic data glucose and fructose are the main carbohydrates in cotton fibers. After the cotton leaves were immersed in $Na_2C^{14}O_3$ soln., a radiochromatogram of the carbohydrates in the fibers of the boll confirmed this. As the cotton bolls matured the total radioactivity of the sugars decreased but the ratio of the radioactivity of fructose to glucose stayed close to 1. Fibers from cotton bolls 5–40 days old were sepd. from the seeds and extd. by alc. at 60–70° for 6 hrs. The alc. ext. was filtered through columns of cation and anion exchange resins. The filtrate was evapd. to dryness at 60–70°. The residue was dissolved in 1 ml. H_2O and 0.05 ml. of this taken for a chromatogram, done by R.'s method. The solvent was PhOH satd. with H_2O, the developer ammoniacal $AgNO_3$ and resorcinol. Glucose and fructose were found. Cotton plant leaves were immersed in Na_2CO_3 soln., contg. $Na_2C^{14}O_3$, 12 days, with interruptions at dark times. After the sugars were sepd. on the chromatogram, it was dried and left 15 days on x-ray film. Glucose, fructose, and traces of other org. compds. were found. For quant. detn. of C^{14} in the sugars the alc. ext. was deionized and 0.2 ml. placed on Al foil. The sample was dried and its activity measured. The same soln. (0.5 ml.) was taken for a chromatogram. The glucose and fructose zones were cut apart and extd. with hot H_2O. The exts. were dried and their activities measured. E. M.

15.8620
15.9100

36561
S/081/62/000/006/105/117
B168/B101

AUTHORS: Usmanov, Kh. U., Tillayev, R. S., Musayev, U. N., Tursunov, D.

TITLE: Radiation polymerization and the production of graft polymers of natural rubber and polystyrene under the action of gamma-rays

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 689 - 690, abstract 6P540 (Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniyu atomn. energii, 1959, v. I, Tashkent, AN UzSSR, 1961, 298 - 302)

TEXT: Graft copolymerization of natural rubber with vinyl chloride (I) and of polystyrene (II) with acrylonitrile (III) and the properties of the products obtained were studied. Irradiation was carried out within the range of $0.5 - 5 \cdot 10^6$ r. The results of the copolymerization were determined from the Cl or N content. The vulcanized products from the copolymer of natural rubber with I have high temperature resistance, they are resistant to solvents and their mechanical and electrical properties exceed the requirements of the ГОСТ(GOST) for insulating rubber used in

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the cable industry. If III is grafted on to II the heat resistance and resistance to solvents are increased. Polymers of I, III, and furfuryl alcohol were obtained by radiation polymerization. The molecular weight of polyvinyl chloride and of polyacrylonitrile was found to be higher than in the case of the polymers obtained by a method other than radiation. [Abstracter's note: Complete translation.]

Tillayev, T.

USMANOV, Kh. U.; DULOVA, V. I.; TILLAYEV, T.; and VVEDENSKAYA, L. A.

"Assimilation of Carbonates by Cotton-Plant Leaves" (Chemistry: Biochemistry) Dokl. AN Uzb. SSR, No. 9, 1953

Abs

W-31146, 1 Feb 55

15.8000 2209, 1407, 1581

21735
S/026/61/000/003/006/006
A166/A127

AUTHORS: Usmanov, Kh.U., Professor, Tillayev, R.S., Candidate of Chemical Sciences, and Musayev, U.N.

TITLE: A New Method of Changing the Properties of Polymers

PERIODICAL: Priroda, no. 3, 1961, 91-93

TEXT: The article deals with the uses of grafted and bloc copolymerization in modifying the properties of polymers. The Institut khimii polimerov AN UzSSR (Institute of Polymer Chemistry, AS Uzbekskaya SSR) has synthesized grafted copolymers of cellulose with acrylonitryl, styrol and other monomers. The grafting of styrol makes the surface of the cellulose waterrepellent, while the grafting of acrylonitryl makes for non-rotting, heat-resistant properties. These methods are at present only in the pilot-plant stage. Academican V.A. Kargin succeeded by treating polymers with oxygen or ozone, to obtain grafted copolymers of polystyrol and acrylic acid, and starch, styrol and methyl methacrylate. Under his direction a team

Card 1/2

A New Method of Changing the ... S/026/61/000/003/006/006
A166/A127

of Uzbek scientists has devised a method of treating cellulose with ozone to synthesize grafted copolymers of cellulose with acrylonitryl or with styrol and other monomers via their peroxide compounds. Mechanical processing is now widely used to break polymer bonds and form free radicals. Intensive friction between two discs of natural and synthetic rubber is used to produce copolymers which combine the strength and frostresistance of natural rubber with the oil- and petroleum-resistance of synthetic rubbers. Grafted copolymers are now being successfully synthesized under ionizing radiation. To reduce the solubility of polyvinyl alcohol, Hungarian scientists have synthesized under influence of X-rays a grafted copolymer of polyvinyl alcohol and methyl methacrylate.

ASSOCIATION: Sredneaziatskiy gosudarstvennyy universitet im. V.I. Lenina (Central Asian State University im. V.I. Lenin), Tashkent.

TILLAYEY, RS

PHASE I BOOK EXPLOITATION SOV/4984

International symposium on macromolecular chemistry. Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya III (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries) Section III. [Moscow, Izd-vo AN SSSR, 1960]

469 p. 55,000 copies printed.

Tech. Ed.: P. S. Kashina.

Sponsoring Agency: The International Union of Pure and Applied Chemistry. Commission on Macromolecular Chemistry.

PURPOSE: This book is intended for chemists interested in polymerization reactions and the synthesis of high molecular compounds.

COVERAGE: This is Section III of a multivolume work containing papers on macromolecular chemistry. The articles in general deal with the kinetics of polymerization reactions, the synthesis of special-purpose polymers, e.g., ion exchange resins, semiconductor materials, etc., methods of catalyzing polymerization reactions, properties and chemical interactions of high molecular materials, and the effects of various factors on polymerization and the degradation of high molecular compounds. No personalities are mentioned. References given follow the articles.

Usanov, Kh. U., U. N. Musayev, and R. S. Tillayev (USSR). The Radiation Method of Copolymerizing Acrylonitrile with Polystyrene and Perchlorovinyl

Rafikov, S. R., G. M. Chelnokova, I. V. Zhuravleva, and P. N. Gribkova (USSR). Oxyethylation of Carbochain and Heterochain Polyamides 170

Santo, I., and K. Gal (Hungary). Grafting Methyl Methacrylate Onto Films of Polyvinyl Alcohol Under the Action of X-Rays 184

Lazar, M., R. Rado, and Yu. Pavlinata (Czechoslovakia). Grafting Methyl Methacrylate Onto Polypropylene and Polyethylene 207

Tutorskiy, I. A., Z. I. Sakiy, and V. M. Burmar (USSR). The Interaction of Carboxyl-Containing Butadiene-Styrene Rubbers With Polyamides and ε-Caprolactam 214

Kolesnikov, G. S., and Te'eng Han-ming (USSR). Synthesis of Free Radicals on Crosslinking in Polyethylene 224

Rado, R., and M. Lazar (Czechoslovakia). The Role of the Source of Free Radicals on Crosslinking in Polyethylene

Mladenov, I., I. A. Tutorskiy, and B. A. Dogadkin (USSR). On the Transformations of Carboxyl-Containing Butadiene-Styrene Rubbers and Their Mixtures With ε-Caprolactam Under the Action of Gamma Radiation 230

Rogovin, Z. A., V. A. Derevitskaya, Sun T'ung, Chang Wei-kang, and L. S. Gal'braykh (USSR). Synthesis of New Cellulose Derivatives and Other Polysaccharides 293

Yermolenko, I. N., and F. N. Kapitskiy (USSR). Initiation of the Controlled Synthesis of Cellulose Ethers With Participation of Nitrogen 302

Ivanov, V. I., M. Yu. Lenshina, V. S. Ivanova (USSR). Oxidational Transformations in Chains of Cellulose Molecules 310

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