83702

Chemical Changes of Polyvinylchloride Under the Influence of Ionizing Radiations

S/190/60/002/009/007/012
B015/B064

and in the presence of air oxygen to a reaction of the latter with the free radicals under the formation of peroxide radicals. The vanishing of the free radicals is accelerated on heating, with chromophores (very likely with polyene character) being formed, intensivating the color of PVC. The infrared spectra were recorded with a device of the firm Khil'ger, model 209. There are 7 figures and [illegible] references: 5 Soviet, 5 US, and 1 French.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpo (Physico-chemical Institute imeni L. Ya. Karpov). Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics of the AS USSR)

SUBMITTED: February 22, 1960

Card 3/3

83475

21.6200 also 2209, 2109

S/190/60/002/009/006/019
B004/B060

AUTHORS: Tikhomirova, N. S., Malinskiy, Yu. M., Karpov, V. L.

TITLE: Study of Diffusion Processes in Some Polymers. III. Irreversible Variations of the Diffusion Characteristics Due to the Action of Gamma Radiation of Co^{60} on the Polymer

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 9, pp. 1335-1348

TEXT: The authors studied the dependence of the coefficient P of the permeability to gas, of the diffusion coefficient D, and of the solubility S of helium and argon on the irradiation dose (up to 1250 Mrad) at 25, 40, 60, and 70°C for films of polyethylene (0.4 mm), polyamide 54/10 (0.01 mm), methylol polyamide 2/10 (0.012 mm), CKC-30 (SKS-30) rubber (0.4 mm), and polytetrafluoro ethylene (0.06 mm). Apparatus, preparation of the films, and method of measurement are described in a previous paper (Ref. 19). Experimental data are provided as follows: 1) For polyethylene: (Figs. 1, 2, Table 1) P and D for helium and argon as a function of the irradiation dose; Fig. 3: dependence of the degree of cross-linking on the dose; Fig. 4:

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83475

Study of Diffusion Processes in Some Polymers. III. Irreversible Variations of the Diffusion Characteristics Due to the Action of Gamma Radiation of Co^{60} on the Polymer

S/190/60/002/009/006/013
B004/B060

relative heights of the peaks of X-ray diffraction in irradiated and non-irradiated material; Table 3: σ for He and Ar as a function of the dose; Fig. 9: log P, log D, and log σ as f(1/T) for non-irradiated material, as well as at 100 Mrad and 800 Mrad. 2) Polyamide and methylol polyamide: Table 2, Fig. 5: P and D as a function of the dose at 25 and 95°C; Figs. 6, 7: relative heights of the peaks of X-ray diffraction; Fig. 10: log P and log D as a function of 1/T for non-irradiated material, as well as at doses of 600 and 1250 Mrad. 3) Polytetrafluoro ethylene: Fig. 8: P, D, and σ as a function of the dose. Table 4 gives the activation energies E_D of diffusion, E_p of permeability, and the values for D_o - defined as $\log D_o = f(E_D)$ (Fig. 11), as well as the enthalpy and entropy of the dissolution of gases in the polymers investigated with varying dose. Table 5 provides the solution heats of ethane, ethylene, propane, and butane in vulcanized natural rubber as a function of the sulfur content. Basing on these data, the authors arrived at the following conclusions: With increasing irradiation dose there is a decrease in the diffusibility of gases in polyethylene.

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03475

Study of Diffusion Processes in Some Polymers. III. Irreversible Variations of the Diffusion Characteristics Due to the Action of Gamma Radiation of Co^{60} on the Polymer

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B004/B060

polyamides, and SKS-30 due to increasing cross-linking. In the case of polytetrafluoro ethylene, D begins to rise at 2 Mrad. At 8 Mrad, the permeability to Ar is 27 times greater than in the case of non-irradiated material; this fact is explained by the formation of microcracks. In the case of polyvinyl chloride, the permeability to Ar is quadrupled, and that to He is trebled, after 250 Mrad. In conformity with Ref. 26, the authors assume a cleavage of HCl, formation of double bonds, and a resulting greater solubility of gases, as well as the formation of microdefects. E_D, heat and entropy of the dissolution of gases increase with polyamides and drop with polyethylene. The drop of E_p is due to the drop of the dissolution enthalpy with increasing dose. Up to a cross-linking of 10-12%, the steepest drop of P and D occurs in polyethylene. D_o is a particularly sensitive characteristic of the structural changes undergone by a polymer under irradiation. The following after-effects were observed: With polyethylene and polyamides, heating leads to a further decrease of P and D;

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Study of Diffusion Processes in Some Polymers. III. Irreversible Variations of the Diffusion Characteristics Due to the Action of Gamma Radiation of Co^{60} on the Polymer

S/190/60/002/009/006/019
B004/B060

with polytetrafluoro ethylene, this effect occurs already at room temperature. These effects, which are explained by the reaction of free radicals, were taken into account during the measurements. The authors thank B. I. Zverev for his determination of the crystal content of irradiated polymers by means of X-ray diffraction. There are 11 figures, 5 tables, and 29 references: 11 Soviet, 12 US, and 6 British.

ASSOCIATION: Nauchno-issledovatel'skiy institut plastmass (Scientific Research Institute of Plastics). Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: March 31, 1960

Card 4/4

83476

21.1200 also 2209, 2109

S/190/60/002/009/007/019
B004/B060

AUTHORS: Tikhomirova, N. S., Malinskiy, Yu. M., Karpov, V. L.

TITLE: Study of Diffusion Processes in Some Polymers. IV. Reversible Variations of the Diffusion Characteristics Under the Action of Irradiation

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 9, pp. 1349-1359

TEXT: In the present article, the authors discuss their studies dealing with the changes in diffusivity of gases through polymer films under the action of irradiation, and explain the reason why the direct measurement of the diffusion constant D gives rise to experimental difficulties, so as to make it preferable to measure the permeability constant P as a function of the time or irradiation τ (Fig. 1). Fig. 2 is a schematic representation of the experimental apparatus. A polyethylene or polytetrafluoro ethylene film was stretched across the diffusion cell made of stainless steel (Fig. 3). The space below the film was filled with helium or xenon (700 torr); the space above the film was evacuated to

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$2 - 5 \cdot 10^{-3}$ torr. The pressure change in vacuum was measured by an induction manometer designed by V. B. Osipov (Fig. 4), the sensitivity of which was 0.05 torr per dial millimeter. The inductivity was recorded with an ЭПВИ-14 (EPVI-14) apparatus. Fig. 5 shows the calibration curve of the manometer. The diffusion cell was irradiated by means of Co^{60} in a К-20000 (K-20000) chamber. The diffusion cell was repeatedly introduced into the irradiation chamber and taken out again. Figs. 6-8 show the function $\Delta p = f(\tau)$ for helium - polyethylene, xenon - polyethylene, and helium - polytetrafluoro ethylene at radiation intensities attaining 730 roentgen/sec. Table 1 gives the effect of various radiation intensities on P. The following was observed: P rises at beginning irradiation and nearly drops back to the original value P_o when irradiation is stopped.

In the case of polyethylene, P rises to the 10 - 15fold, and doubles in the case of polytetrafluoro ethylene. Xenon is diffused more quickly than helium. Fig. 9 shows that P/P_o is a linear function of the radiation intensity. Table 2 shows the effect of the temperature increase of the film on the permeability to gas. It may be seen that the latter was responsible

83476

Study of Diffusion Processes in Some Polymers. S/190/60/002/009/007/013
IV. Reversible Variations of the Diffusion B004/B060
Characteristics Under the Action of Irradiation

for only 1/6 of the measured effect. Specific experiments made with an even more sensitive manometer (0.013 torr per dial millimeter, calibration curve Fig. 10) showed that the higher permeability to gas is not caused by an increased solubility of gases in the polymer irradiated (Table 3). A paper by Yu. S. Lazurkin et al. is mentioned (Ref. 1). There are 10 figures, 3 tables, and 4 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut plastmass
(Scientific Research Institute of Plastics).
Fiziko-khimicheskiy institut im. L. Ya. Karpova
(Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: March 31, 1960

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28 (5)

S/032/60/026/01/034/052
B010/B006

AUTHORS: Karpov, V. L., Malinskiy, Yu. M., Mitrofanova, L. V., Finkel', E. E., Fridman, A. S.

TITLE: Device for Determination of the Thermal Stability of Polyethylene- or Rubber Cable Insulations

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol 26, Nr 1, pp 102 - 103 (USSR)

ABSTRACT: The device mentioned in the title (Fig 1) consists essentially of an H-shaped frame standing on a steel plate. The latter has an opening in the middle of the crossbeam, through which the post with the loading weights is guided. At its top end, the post is fitted with a plate which transmits the pressure to the sample by means of two inset rodlets. The sample (a piece of cable with the insulation to be tested) is supported by two rodlets also. To indicate subsidence (sample deformation) of the last-mentioned plate by the indicator, the indicator is placed on the plate. Except for the indicator, the device is put in a thermostat, rendering possible sample heating at various rates up to 230°. The thermomechanical curves obtained for samples of high- and low-pressure polyethylene by means of the device described above

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are given (Fig 2). The relative measuring error of this device is ± 5% at the maximum. There are 2 figures.

KORCHEMKIN, F.I.; MALINSKIY, Yu.M.; SUKHOV, G.V.

Effect of ionizing radiations on the fibers of wood cellulose.
Trudy LTA no.91:101-104 '60. (MIRA 15:12)

1. TSentral'noy nauchno-issledovatel'skiy lesokhimicheskiy institut i Fiziko-khimicheskiy institut imeni Karpova.
(Cellulose)
(Materials, Effect of radiation on)

5(4),21(8),15(8)

AUTHORS: Tikhomirova, N.S., Malinskiy, Yu.M., Karpov, V.L.

S/020/60/130/05/033/061
B004/B014

TITLE: Reversible Alterations of the Permeability of Polymers to Gases in the Gamma Irradiation Process

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 5, pp 1081-1084 (USSR)

ABSTRACT: As M.A. Makul'skiy and Yu.S. Lazurkin (Ref 5) had observed reversible effects in the irradiation of polymers, the authors investigated the effect of γ-radiation upon gas diffusion by polymers. Films of polyethylene and polytetrafluoroethylene were irradiated with Co^{60} (activity of 20 kg-equiv. of radium) with doses of up to 700 rads/sec. The rate of helium- or xenon diffusion by the film was manometrically measured. The design of the pressure gauge with a recorder of the type EPVI-14 was suggested by V.B. Osipov. The experimental apparatus is illustrated in figure 1. Figure 2 shows the function $p = f(\tau)$ for polyethylene at 10^0 and a dose of 730 rads/sec. Experimental data are compiled in table 1. Immediately after the introduction of the radiation source into

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the apparatus, pressure rises linearly with the radiation dose. When the source has been removed, the diffusion rate changes, approaches the initial rate, but remains higher. This hangover effect increases after each irradiation. The same results were obtained for polytetrafluoroethylene (Fig 3). In this case, test periods were, however, short because of the low radiation stability of this polymer. Figure 4 shows the temperature dependence of the rate of xenon diffusion by polyethylene. The acceleration of radiation-induced diffusion is explained by local excitation of molecules, increase in their elasticity due to primary absorption events of γ-quanta, and by secondary reactions. There are 4 figures, 1 table, and 7 references, 4 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L.Ya. Karpova (Institute of Physical Chemistry imeni L.Ya. Karpov). Institut promyshlennosti plasticheskikh mass (Institute of the Plastics Industry)

PRESENTED: July 30, 1959, by V.A. Kargin, Academician

SUBMITTED: July 14, 1959

BEMFORD, K.[Bamford, C.H.]; BARB, U.[Barb, W.G.]; DZHENKINS, A. [Jenkins, A.D.]; ON'ON, P.[Onyon, P.F.]; GRITSENKO, T.M., kand.khim. nauk, [translator]; MILYUTINSKAYA, R.I., kand. khim. nauk, [translator]; PRAVEDNIKOV, A.N., kand. khim. nauk [translator]; MALINSKIY, Yu.M., kand. khim. nauk, red.; KHODETSKAYA, Z.F., red.; PRIDANTSEVA, S.V., tekhn. red.

[Kinetics of vinyl polymerization by radical mechanisms] Kinetika radikal'noi polimerizatsii vinilovykh soedinenii. [By] C.H. Bamford i dr. Moskva, Izd-vo inostr. lit-ry, 1961. 345 p. (MIRA 15:3)
Translated from the English.
(Vinyl compound polymers) (Radicals (Chemistry))

S/081/62/000/003/088/090
B159/B101

5.4600

AUTHORS: Tikhomirova, N. S., Malinskiy, Yu. M., Karpov, V. L.

TITLE: Irreversible and reversible changes of the diffusion characteristics of certain polymers as a result of the action of gamma radiation on a polymer

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1962, 644-645, abstract 3R65 (Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniyu atomn. energii, 1959, v. I. Tashkent, AN UzSSR, 1961, 334-339)

TEXT: The diffusion of He, Ar, and Xe through films of polyethylene (PE), polyamide-54/10 (PA), methylolpolyamide-2/10, CKG-30 (SKS-30) and polytetrafluorethylene (PTFE) after gamma irradiation is studied. The constants of diffusion (D) and permeability (PR) were determined. In the case of He after a dose of 400 Mrads at 25 and 95°C, D and PR decreased for all polymers. On increasing the irradiation dose the activation energies of D and PR increase in the case of the polyamides; in the case of PE when the irradiation dose was increased to 400 Mrads the activation

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Irreversible and reversible ...

energies decreased and then remained practically constant. In all cases an aftereffect was observed. It was established that PR sharply increases at the initial moment of irradiation. PR assumes its initial value on removal of the source. The acceleration of PR grows as the dose rate is increased. It is assumed that the increase of PR is due to an increase in solubility of He, Ar, and Xe, or by an acceleration of D, or by both factors simultaneously. [Abstracter's note: Complete translation.]

Card 2/2

15 8520
9,2165 (1001, 1331, 1482)

33124
S/638/61/001/000/055/056
B125/B104

AUTHORS: Karpov, V. L., Malinskiy, Yu. M., Mitrofanova, L. V., Slinitsyn, S. T., Finkel', E. E., Fridman, A. S. Chernetsov, S. M.

TITLE: Increase of the thermal stability of polyethylen-insulated lines by ionizing radiation

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959 Trudy v. 1 Tashkent, 1961, 383-389

TEXT: A copper wire 1 mm in diameter and insulated with 0.5 mm of polyethylene was irradiated by a Co^{60} gamma radiation source of 20,000 g-equ. Ra in a vacuum as well as by an electron linear accelerator in the air. The thermal stability of the irradiated samples was determined by the analysis of the thermomechanical curves, i.e., of the time dependence of deformation under given load and with the temperature rising by a constant rate of 50 deg/hr, using a specially built device. The deformation that was attained is a measure of thermal stability at given temperature and load. The lifetime of the workpiece can be estimated from

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Increase of the thermal stability ...

the time dependence of deformation (likewise measurable by the above-mentioned device) at constant temperature and load At increased temperatures the deformation is the lower, the higher the radiation dose, and remains practically constant up to 250°C. The restriction of deformation under a load of 0.5 kg to about half the radial thickness by irradiation with doses of 100-150 Mrad or by irradiation with 1-Mev (15 $\mu a/cm^2$) electrons for 2-4 min guarantees the usability of lines above 80°C. The final deformation is increased by a load increase without any change of its nature. The line still remains efficient if the load is quadrupled The amount of final deformation is not affected by the rate of temperature increase over a wide range. The deformation is only little temperature-dependent under both long and brief load action. A line with irradiated insulation can be exposed to 180°C for at least 4 hrs. and remains efficient for some hours even at 230-250°C. If suitable stabilizers are introduced into polyethylene, the maximum operating time in this temperature range can probably be increased considerably, and the line can be exposed to even higher temperatures for a short time. The increased thermal stability improves the reliability of insulated wires at high temperatures, especially in the case of breakdown, and increases

Increase of the thermal stability ...

the operating time at normal temperatures. Gamma irradiation in vacuo increases the stability at 20° and 90°C, while doses of more than 200 Mrad reduce it. The irradiation of 0.4 mm thick samples in the air reduces the relative elongation and also the tensile strength at 20° and 90°. The best strength properties are achieved by irradiation in vacuo with doses of up to 100 Mrad. The tensile strength of an insulation irradiated with fast electrons are presented in Table 1. Tensile strength, resistance to frost, electric breakdown and electrical resistance of a sample irradiated with a gamma dose of 100 Mrad or, equivalently, with 1-Mv electrons for 2-4 min were fully satisfactory. The resistance of line insulation to thermal aging drops with increasing radiation dose. Samples irradiated with electrons are more resistant in this respect than samples irradiated with an equivalent gamma dose. There are 6 figures, 6 tables, and 7 references: 5 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: Dolle M., Kelling C. D., Rose D. J. J. Am. Chem. Soc., 76, 4304, 1954; Charlesby A., Bain, T. Brit. Plastics, 30, 4, 146, 1957.

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33124
S/638/61/001/000/055/056
B125/B104

ASSOCIATION: Gosudarstvennyy n.-i. institut kabel'noy promyshlennosti (State Scientific Research Institute of Cable Industry). N.-i. fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Physicochemical Research Institute imeni L. Ya. Karpov). Vsesoyuznyy elektrotekhnicheskiy institut im. V. I. Lenina (All-Union Electrotechnical Institute imeni V. I. Lenin)

Table 1. Tensile strengths of insulations irradiated with fast electrodes. Legend: (1) irradiation technique; (2) nonirradiated material; (3) voltage; (4) exposure (min); (5) tensile strength, kg/cm^2; (6) relative elongation, %.

(1) Режим облучения	(2) Необлученный материал	(3) Напряжение: 0,6 Мв					1 Мв			
		(4) экспозиция, мин.								
		1	2	4	8	16	0,5	1	2	4
(5) Сопротивление разрыву, кг/см²	160	148	134	131	158	154	166	159	143	131
(6) Относительное удлинение, %	480	452	221	144	106	38	461	357	266	165

Card 4/4

15 2600
15 1120

33389
S/190/62/004/002/020/021
B101/B110

AUTHORS: Malinskiy, Yu. M., Prokopenko, V. V., Kargin, V. A.

TITLE: Effect of the relaxation rate on the strength of adhesive joints

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 2, 1962, 299-3[illegible]

TEXT: The authors studied the dependence of strength of the joint glass - polyvinyl acetate (PVA) - glass on the temperature and the plasticizer content of the polymer (dibutylphthalate, DBP). The specimens consisted of an oblique glass parallelepiped (Fig. 1). 20% acetonic solution of PVA was applied to the glass surface and then dried at room temperature on air for 40 min. These glass surfaces were then pressed together with a pressure of 10 kg/cm^2 at 80°C. The glue layer was 0.01 - 0.04 mm thick and had no effect on the strength. The strength was measured by loading a cylinder in the cuneiform groove (d = 1.76 mm). The results (Fig. 2) are explained by the fact that above the vitrification temperature the polymer strength decreases, however, the relaxation rate increases. Thus the

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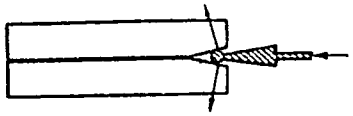
Effect of the relaxation ...

strength reaches a maximum somewhat below the vitrification temperature. With increasing plasticizer content the vitrification temperature decreases linearly. This could also be proved by thermomechanical experiments with PVA films. The extremum is characteristic of the inhomogeneous stress distribution. A. P. Aleksandrov, S. N. Zhurkov, G. M. Bartenev, V. Ye. Gul', G. A. Patrikeyev, and B. I. Panshin are mentioned. There are 5 figures and 8 references: 5 Soviet and 3 non-Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: February 16, 1961

Fig. 1: Schematical representation of specimen testing



GUZEYEV, V.V.; MALINSKIY, Yu.M.

Apparatus for measuring stress relaxation of fibers. Zav.lab. 29 no.11:1373-1374 '63. (MIRA 16:12)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.

L 42289-65 EPF(c)/EPR/EPA(s)-2/EWP(j)/EWT(m)/EWP(t)/EWP(b)/T/EWP(c) Pc-4/Pq-4/
ACCESSION NR: AP4037272 Pr-4/Ps-4 RM/WH/WW S/0190/64/006/005/0787/0790

AUTHORS: Malinskiy, Yu. M.; Trifel', B. Yu.; Kargin, V. A.

TITLE: Studies of breakup of reinforced plastics. 1. Investigation of models of unoriented glass reinforced plastics

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 5, 1964, 787-790, and two inserts following p. 788

TOPIC TAGS: glass reinforced plastic, glass reinforced plastic breakup, polyester plastic binder, polyester PN 1, polyester PH 3, polyester PN 4, glass rod, glass polymer interface stress, tensile test, FMPw 250 dynamometer

ABSTRACT: Test specimens in the shape of double-bladed paddles were made of polyesters PN-1, PN-3, and PN-4, reinforced with a single or multiple longitudinal alkali-free or molybdenum-bearing glass rod 50 μ - 1 mm in diameter. The polymers were hardened for 20-24 hours at room temperature in the presence of an initiator and accelerator, and were heated for 4 hours at 80C. The specimens, with 40-mm long constricted central portions and with paddle areas of (2.5-3.0) x 8 mm, were stretched on a FMPw-250 dynamometer at the rate of 30 mm/minute. Motion picture records of the experiments were made in polarized light. The results of tests on

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550 specimens showed that in the single-rod reinforced plastic a gradual cracking occurred in the glass rod. The number of cracks increased with time and with the concentration of stresses near the zone of failure. It was shown by V. A. Kargin, Yu. M. Malinskiy, and A. L. Rabinovich (Dokl. AN SSSR, 157, No. 3, 1964) that during the deformation of comparatively hard reinforcing elements, bound by adhesive forces to a layer of polymer, unevenly distributed shearing stresses (τ) originated on the interphase boundary, while near the end of the element (zone l) there appeared an area of sharp concentration of stresses. These findings were confirmed by photographic records. It was also found that when the reinforcing rod was ruptured in several places, the breakdown of the plastic specimen took place where the strength of the polymer was the lowest. The character of the polymer break offered further proof that the original crack occurred on the glass-polymer boundary. Near the broken surface there was a glossy area, becoming dull and rough toward the edges of the polymer. The overstresses near the end of the reinforcing element produced a weakening of the specimens reinforced by either a single rod or by several rods. Reinforcing by previously fragmented rods brought about strength improvement. No advantage was gained by placing the rods at 20 degrees to each other. The authors are grateful to A. L. Rabinovich for discussion of the paper. Orig. art. has: 5 charts and 5 pictures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Institute)

SUBMITTED: 13May63

Card 2/3

ACCESSION NR: AP4040492 S/0190/64/006/006/1116/1119

AUTHORS: Malinskiy, Yu. M.; Guzeyev, V. V.; Zubov, Yu. A.; Kargin, V. A.

TITLE: Thermodynamics of the deformation of oriented fibers. 1. Temperature dependence of a caprone fiber

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 6, 1964, 1116-1119, and insert facing p. 1073

TOPIC TAGS: caprone fiber, reversible contraction, crystal pulling, shrinkage hysteresis, temperature dependence

ABSTRACT: The authors studied the temperature dependence (in the range 20 to 70C) of the length of polycaprolactam fiber samples, previously pulled to various degrees. The extent of reversible contraction on heating and lengthening on cooling depends upon the degree of the pulling and on the crystallinity. For fibers swollen in water the relation of temperature to change in fiber length is about four times that for air-dried specimens. The temperature dependence of the water content and desorption processes markedly affects this relationship. It is concluded that the phenomenon of reversible contraction during heating is due to the tendency of oriented macromolecules to increase the conformational assemblage,

Card 1/2

ACCESSION NR: AP4040492

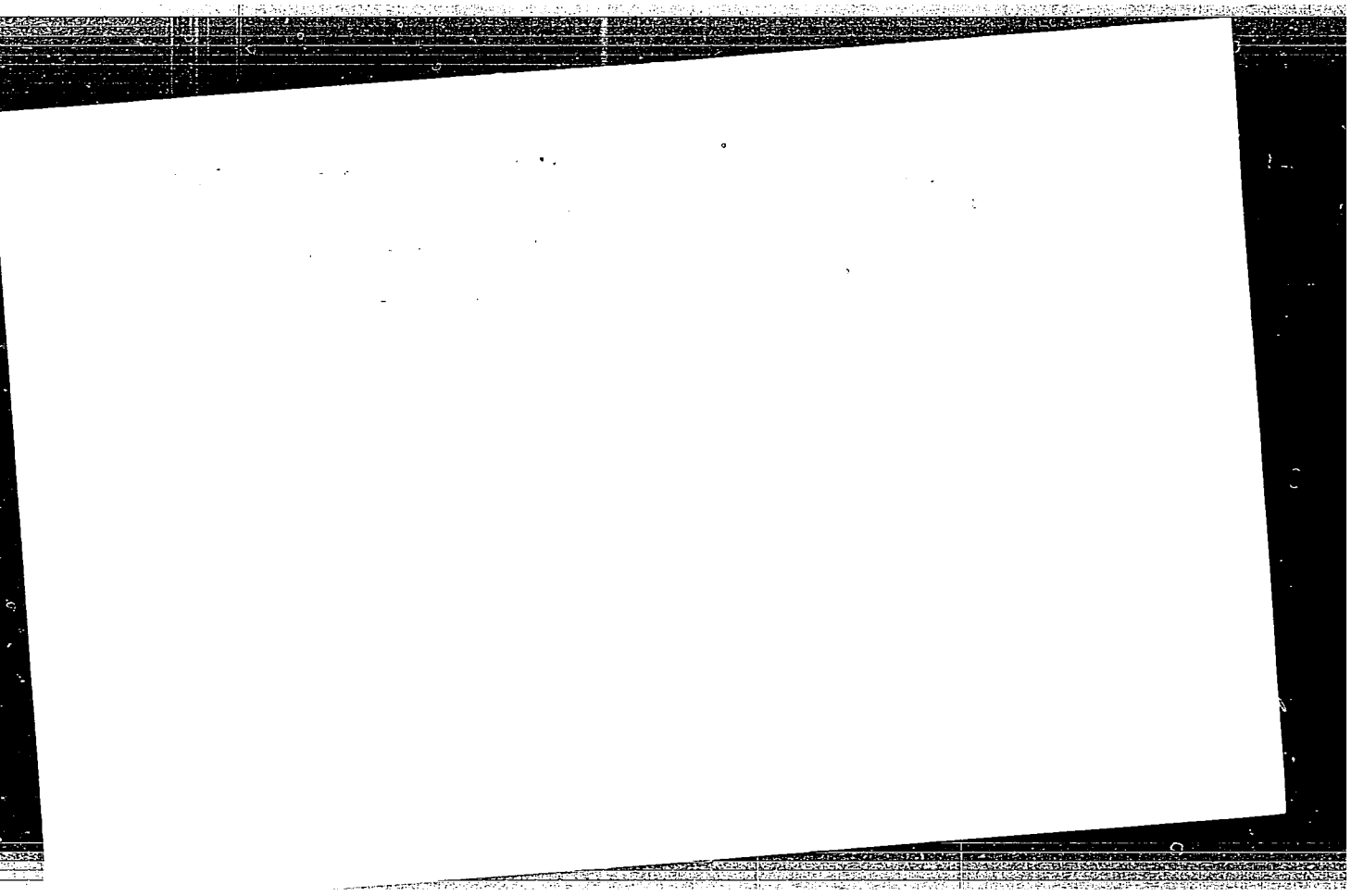
which prevails over ordinary thermal linear expansion. Orig. art. has: 1 figure, 1 table, and 4 formulas.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 23Jul63 ENCL: 00

SUB CODE: MT NO REF SOV: 005 OTHER: 004

Card 2/2



APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031820014-1"

L 17834-65 EPA(s)-2/EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10
ASD(f)-2/AEDC(a)/AFWL/AFTC(a)/AFETR/ESD(gs)/ESD(t) RM/WW
ACCESSION NR: AP4045437 S/0190/64/006/009/1708/1712

AUTHOR: Malinskiy, Yu. M.; Trifel', B. Yu.; Kargin, V. A.

TITLE: Effect of certain physicochemical properties of the binder and filler on the strength of materials

SOURCE: Vysokomolekulyarnyye soyedineniya, v.6, no. 9, 1964, 1708-1712

TOPIC TAGS: glass reinforced plastic, binder elongation, filler elongation, polymer shrinkage, polymis nature, overstress, boundary layer, adheaive band, adhesive strength

ABSTRACT: The effects of the difference in the elongation of the binder and the filler, of the chemical nature of the polymer, and of its shrinkage during curing on the magnitude of overstresses at the boundary layer have been studied with model specimens made of a number of plastics, reinforced with one or two glass rods, and cured by special methods. The destruction mechanism of the specimens was studied with motion pictures. It was shown that the rate of overstresses

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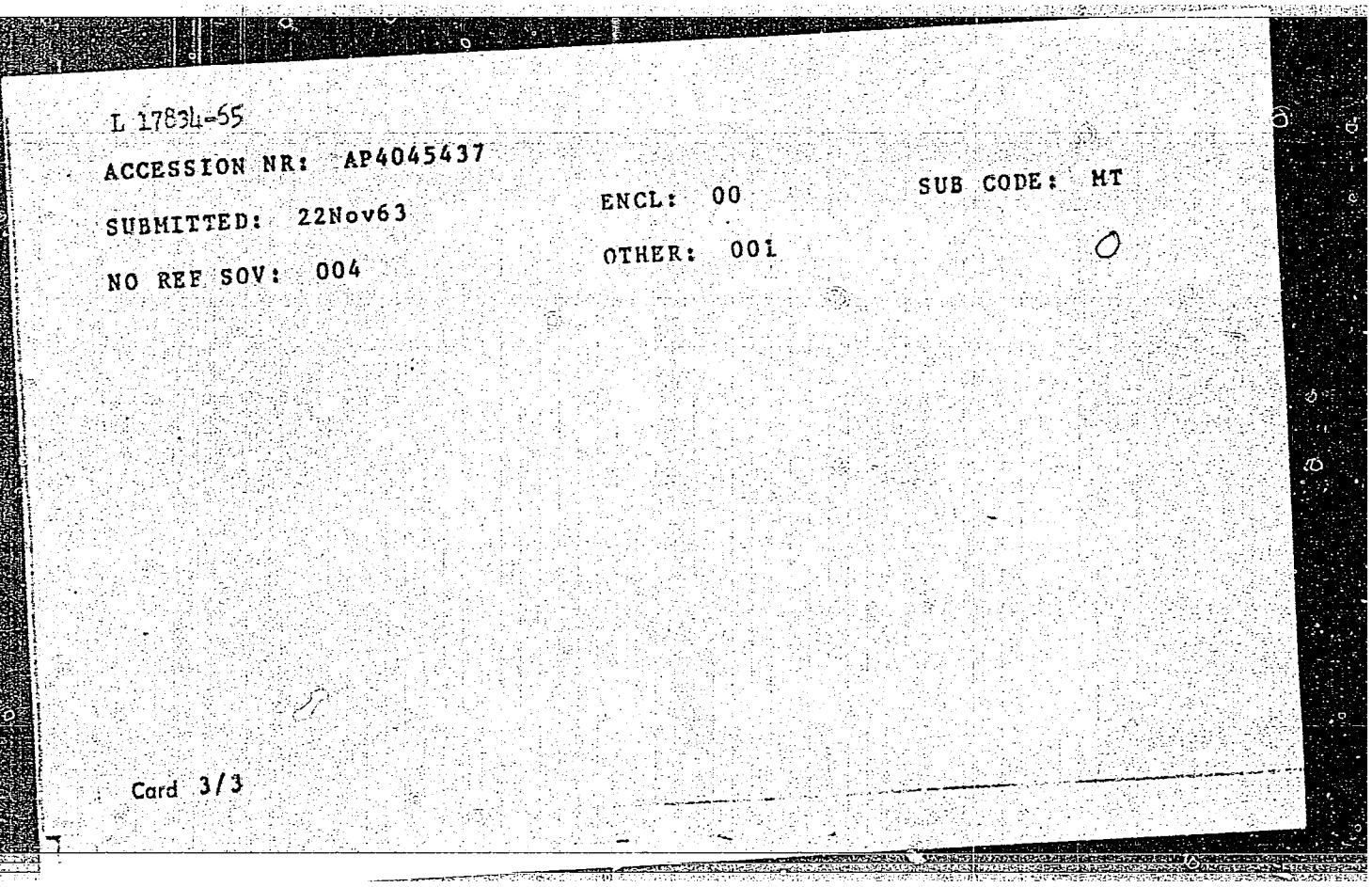
at the glass-polymer boundary increases with an increase in the shrinkage of the binder during the curing and with an increase in the adhesive bond strength between the polymer and the filler. These overstresses adversely affect the strength of glass-reinforced plastics having a low (e.g., 20%) filler content. Overstresses in glass reinforced plastics with a high filler content (about 80%) have much less affect on the strength of plastics. In this case shrinkage plays the role of a certain additional "reinforcing" factor between the glass and the polymer and promotes a more uniform distribution of stresses on the reinforcing elements. A decrease in the difference between the elongation of the filler and the binder decreases the role of overstresses. Overstresses at the boundary occurred in all specimens studied, which were made of polymers with very different properties, such as unmodified and thiocol-modified epoxides, PN-1 maleic polyester, and MDF-2 polyester-acrylate. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)



L 17834-65

ACCESSION NR: AP4045437

SUBMITTED: 22Nov63 ENCL: 00 SUB CODE: MT

NO REF SOV: 004 OTHER: 001

Card 3/3

L 12461-65 EWT(m)/EPF(c)/EPR/EWP(j)/T/EWP(v) Pc-4/Pr-4/Ps-4 APGTR WW/RM

ACCESSION NR: AP4047212 S/0190/64/006/010/1832/1837

AUTHOR: Malinskiy, Yu. M.; Prokopenko, V. V.; Kargin, V. A.

TITLE: The nature of extremal dependence of the strength of adhesive bonds and polymeric materials on the temperature and deformation rate

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 10, 1964, 1832-1837

TOPIC TAGS: adhesive, polyvinyl acetate, adhesive bond strength

ABSTRACT: A study has been made of the effect of the loading rate and adhesive-film thickness on the temperature dependence of adhesive bond strength (ABS). The ABS tests were carried out by a previously described method with glass-poly(vinyl acetate) or corundum-filled poly(vinyl acetate) or BF-4 glass specimens (BF-4 is a phenol-formaldehyde-poly(vinyl butyral) resin). ABS versus temperature curves showed a maximum near the glass transition temperature (Tg). An increase in the loading rate shifted the temperature (T_{max}) of maximum ABS upward. This was in good agreement with published data on Tg versus loading rate, confirming the role of relaxation, which determines Tg, in the ABS rise in the vicinity of Tg. A decrease in the adhesive-film thickness also shifted T_{max} upward. The observed

Card 1/2

L 12461-65

ACCESSION NR: AP4047212

extremal temperature dependence of ABS was attributed to nonuniform stress distribution in the seam; this was thought to hold true in general for polymeric adhesives exhibiting adhesive or cohesive failure. Such nonuniformity may be due to partial crystallization, filler, a cut in the specimen, specimen shape, or loading conditions. Orig. art. has: 7 figures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 09Dec63 ATD PRESS: 3123 ENCL: 00

SUB CODE: GC, MT NO REF SOV: 015 OTHER: 005

Card 2/2

MALINSKIY, Yu.M.; RATNER, S.B.; REZNIKOVSKIY, M.M.; POLYAK[illegible]

Characteristics of polymer materials. Standartizatsiia 28 no.8:
23-28 Ag '64.

L 21066-65 EPF(c)/EPR/EPA(s)-2/EWP(j)/EWT(m)/T/EWP(v) Pc-4/Pr-4/Ps-4/
Pt-10 ASD(f)-3 RM/WW

ACCESSION NR: AP4044887 S/0020/64/157/006/1434/1437

AUTHOR: Kargin, V. A.; Malinskiy, Yu. M.; Rabinovich, A. L.; Trifel', B. Yu.

TITLE: On the strength of model specimens of unidirectional structures

SOURCE: AN SSSR. Doklady*, v. 157, no. 6, 1964, 1434-1437

TOPIC TAGS: strength, unidirectional structure, glass plastic, stress strain distribution, optical polarization stress analysis

ABSTRACT: The authors made an attempt to estimate the distribution of stresses in a certain model of a heterogeneous system, such as glass-plastics, in order to find the main factors which determine the strength of the oriented materials. The experimental investigation was carried out by the optical-polarization method, and the theoretical treatment with the Maxwell equation generalized by G. I. Gurevich (Tr. inst. fiz. Zemli AN SSSR #169, 60 (1959)) which relates the length of the sample to stresses, Hooke's modulus, time and certain elastic constants. It was found that there are, at the rupture location of the reinforcing

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L 21066-65

ACCESSION NR: AP4044887

3

elements, in the adjoining binding material, large concentrations of shearing stresses that may become the foci of the rupture of the next element. Approximations are given for the distribution of stresses and strains. Orig. art. has: 3 figures and 7 equations

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physical Chemical Institute) Institut khimicheskoy fiziki, Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR)

SUBMITTED: 19Feb64 ENCL: 00

SUB CODE: MT, GC NO REF SOV: 006 OTHER: 006

Card 2/2

MALINSKIY, Yu. M.; TRIFEL, B. Yu.; KARGIN, V. A.;

"Examinations of overstresses on the boundary glass-plastic in reinforced plastics."

report submitted for 1st Intl Glassfiber-Reinforced Plastics & Epoxy Resins Cong, Berlin-Adlershof, E. Germany, 22-27 Mar [illegible].

L 57547-65 EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 WW/RM

ACCESSION NR: AP5016884 UR/0374/65/000/003/0063/0067
678:532.096

AUTHOR: Malinskiy, Yu. M. (Moscow); Prokopenko, V. V. (Moscow); Kargin, V. A. (Moscow)

TITLE: Temperature dependence of the strength of adhesive joints involving crystalline polymeric adhesives 15

SOURCE: Mekhanika polimerov, no. 3, 1965, 63-67 45 B

TOPIC TAGS: adhesive, adhesive strength, adhesive joint, polymer, crystalline polymer

ABSTRACT: A study has been made of the temperature dependence of the strength of adhesive bonds involving crystalline polymers. Adhesive joint specimens were prepared using steel or duralumin substrates and the "mixed polyamide-4,5,8" [not further identified] or gutta percha unfilled or filled with corundum. The polymer was applied as a solution, after which the specimen was dried in air, and subjected to elevated temperatures and compressive loads (100—175C, 35—80 kg/cm^2). Stripping tests were then carried out. It was found that in the absence of filler, failure is adhesive, while when filler is used, it is adhesive in about half of the

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L 57547-65

ACCESSION NR: AP5016884

specimens and cohesive in the other half. Curves of adhesive strength versus temperature go through two peaks, one near the glass-transition temperature (T_g) of the adhesive and the other near its melting point (T_m). The peak near T_g was considered as confirming the significant effect of passage through the glass region on the mechanical properties of crystalline polymers. The peak in the vicinity of T_m was shown to be due to polymer recrystallization at the apex of the growing crack where the excess stress was concentrated. The two peaks are present both in the case of adhesive failure and in that of cohesive failure. It was also shown that the filler lowers the stress value at which recrystallization of the gutta percha occurs. Orig. art. has: 5 figures. [SM]

ASSOCIATION: none

SUBMITTED: 11Jan65 ENCL: 00 SUB CODE: MT

NO REF SOV: 008 OTHER: 000 ATD PRESS: 4039

Card 2/2

AP6000989 (A) WW/JWD/RM

SOURCE CODE: UR/0286/65/000/022/0060/0060

AUTHORS: Malinskiy, Yu. M.; Trifel', B. Yu.; Kargin, V. A.

ORG: none

TITLE: A method for obtaining filled plastics. Class 39, No. 176415 announced by Scientific Research Physicochemical Institute im. L. Ya. Karpov (Nauchno-issledovatel'skiy fizhiko-khimicheskiy institut)

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 60

TOPIC TAGS: polymer, plastic, epoxy, polyester, resin

ABSTRACT: This Author Certificate presents a method for obtaining filled plastics, consisting of a filler and polyester maleic or epoxide binders, by applying a preliminary coating of a sizing substance to the surface of the filler. To increase the strength of the filled plastics, polyisobutylene, polychloroprene, or trifluoroacetic acid are used as sizing agents.

SUB CODE: 11/ 07/ SUBM DATE: 05Mar64

Card 1/1

UDC: 678.046.7:678.763.2.742.4

L 45410-65 EWP(j)/EWT(m)/T Pc-4 RM

ACCESSION NR: AP5011247 UR/0190/65/007/004/0638/0641

AUTHORS: Malinskiy, Yu. M.; Guzeyev, V. V.; Kargin, V. A. 20 18 B

TITLE: Deformation of polypropylene fiber

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 4, 1965, 638-641

TOPIC TAGS: polypropylene, fiber, temperature dependence, thermal expansion, heat treatment / Moplen polypropylene

ABSTRACT: In order to determine the correction for thermal linear expansion, the temperature dependence of the length of polypropylene fibers was studied. Two types of fibers were examined: some stretched to 7.6 times, some to 12 times their original lengths. The first were obtained from Moplen polypropylene. They were stretched in glycerin at 120C at a rate of 35 m/min. The fibers were washed from the glycerin by water at 50C. The second type of fibers was obtained from the first at 140C in nitrogen at a rate of 15% per minute. The fibers were heat-treated at constant lengths at 100C for 3 hours and were then set at 45C for 9-10 hours. The first type of specimen had a sp gr of 0.903, the second 0.906. The temperature dependence of length was then measured. Specimens of the first type had a coefficient of linear thermal expansion near zero,

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L 45410-65

ACCESSION NR: AP5011247

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and specimens of the second type showed a reversible contraction on heating. Results thus show that increase in stretching leads to increase in reversible contraction during heating. With increase in crystallinity, the amount of contraction declines. Fibers heat-treated for 3 hours contracted less than those treated for 1 hour. The entropy component in the recovery force proved to be less than 40%. The amount of this contribution and the sign are functions of the strain and the amount of stretching. This fact indicates that antibonding and disordering are important factors during deformation of oriented crystalline polymers. "The authors express their sincere thanks to V. S. Klimenkov for kindly furnishing the specimens." Orig. art. has: 5 figures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 07Jun64 ENCL: 00 SUB CODE: OC, MT

NO REF SOV: 005 OTHER: 000

Card 2/2 nb

GULEYEV, V.V.; MALINSKIY, Yu.M.

Accounting for the factor of anisotropy in the study of strain thermodynamics in oriented fibers. Vysokom. soed. 7 no.5:945-946 My '65. (MIRA 18:9)

MALINSKIY, Yu.M.; ORLOVSKAYA, T.T.; KARGIN, V.A., akademik

Effect of the thickness of a polymer film on its structure. Dokl. AN SSSR 160 no.5:1128-1130 F '65. (MIRA 18:2)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.

L 1432-66 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5021891 UR/0020/65/163/006/1419/1422

AUTHORS: Vinogradov, G. V.; Mustafayev, V. A.; Podol'skiy, Yu. Ye.; Malinskiy, Yu. M.

TITLE: Transition of external friction to viscous flow during surface melting of polymers

SOURCE: AN SSSR. Doklady, v. 163, no. 6, 1965, 1419-1422

TOPIC TAGS: polymer, friction, viscosity, viscous flow, polystyrene, polyethylene, resin

ABSTRACT: A tribometer was designed by means of which the effect of temperature on the surface friction of polymers was studied. A schematic of the tribometer is shown in Fig. 1 on the Enclosure. Three different types of polymers involved in this study were: amorphous, crystalline, and radiationally cross-linked polyethylene. The experimental results are shown graphically; typical results for amorphous polymer are given in Fig. 2 on the Enclosure. The form of the experimental curves is explained in terms of a relaxation mechanism. Orig. art. has: 4 graphs.

ASSOCIATION: Institut neftekhimicheskogo sinteza, Akademii nauk SSSR (Institute

Card 1/4

L 1432-66

ACCESSION NR: AP5021891

6

for Petrochemical Synthesis, Academy of Sciences SSSR); Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Institute)

SUBMITTED: 04Feb65 ENCL: 02 SUB CODE: OC

NO REF SOV: 009 OTHER: 002

Card 2/4

L 1432-66

ACCESSION NR: AP5021891

ENCLOSURE: 01

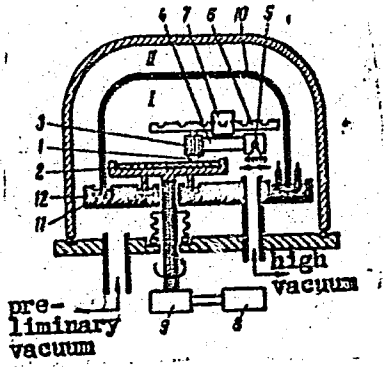

Fig. 1.

Principal schematic of the tribometer Tr-7.
1- semispherical slider; 2- disk; 3- chuck; 4- dynamometric plate; 5- hinged support; 6- lever; 7- load; 8- electric motor; 9- reducer; 10- glass cover; 11- sealing liquid; 12- plate

Card 3/4

L 1432-66

ACCESSION NR: AP5021891

ENCLOSURE: 02

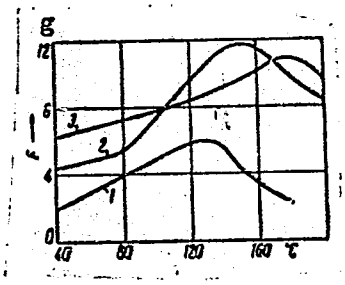

Fig. 2.
Effect of temperature on friction between steel and amorphous polymers (load 10 g, rate of sliding 5 x 10^{-3} cm/sec).
1- polyvinylacetate; 2- polystyrene; 3- polymethylmethacrylate

Card 4/4 DP

BERANEK, Miroslav; MALINSKY, Ivan

Effect of salting-out agents on the extraction of uranium by methylcyclohexanone. Sbor chem tech no.3, part 1:171-189 '59.

1. Katedra chemicke technologie kovu, Vysoka skola chemicko-technologicka, Praha.

ROTSCHILD, L.; LENFELD, J.; JORDA, V.; MALINSKY, J.

Effect of emetine on phlebitis. Cesk. fysiol. 7 no.4:333-334 July 58.

1. Dermatologicka klinika, farmakologicky a histologicky ustav lek. fak. PU, Olomouc.

(EMETINE, effects,
on exper. phlebitis (Cz))
(PHLEBITIS, exper.
eff. of emetine (Cz))

MALITCHI, Elena.

Indications and contraindications for surgery of mitral stenosis.
Bul stiint., sect. med. 7 no.4:987-1002 Oct-Dec 55.

(MITRAL STENOSIS, surgery
indic. & contraindic. for commissurotomy)

MARINESCU,V.,prof.; SETLACEC,D.; MALITCHI,E.; LITARCHECK,G.; FETIODE,B.

Some aspects of our experience in cardiac surgery. Rumanian M. Rev. 3 no.3:25-36 Jl-S '59.
(HEART SURGERY)

PASTIU,V.; SVET,M.; GHERMAN,A.; MALITCHI,E.; MIHAILESCU,V.

Cardiac insufficiency in mitral stenosis. Probl. card.,Bucur. 4:301-312 '59.
(MITRAL STENOSIS, complications)
(HEART FAILURE CONGESTIVE, etiology)

HORTOLOMEI, N., academician; CRACIUN, E. C.; GHITESCU, T.; MALITCHI, Elena; ZAHARIA, Maria

The importance of biopsies of the left auricle for surgery of mitral stenosis. Probl. ter. 10 no.1:7-10 '59.

(MITRAL STENOSIS surgery) (HEART pathology)

HORTOLOMEI, N., Academician; GHITESCU, T.; MALITCHI, Elena; STEFANESCU, Tr.; FOTIADE, B.; FLOREA, N.

Indications for the Blalock operation in Fallot's tetralogy. Prob. ter., Bucur. 10 no.3:15-19 '59.
(TETRALOGY OF FALLOT, surgery)

MARINESKU, V.; SETIACHEK, D.; MALITSKI, E.; LITARCHEK, G.; FOTIADE, B.

Certain aspects of our experiences with cardiac surgery. Khirurgiia, Sofia 12 no.11:929-944 '59.
(HEART SURGERY)

MARINESCU, Voinea, prof.; MALITKI, E.; FOTIADE, B.

The utility of complex explorations in order to avoid errors in operative indications of cardiac surgery. Rumanian M Rev. no.3:57-63 Jl-S '60.
(HEART SURGERY)

MARINESCU, V[illegible]a, prof.; MALITCHI, E., dr.; FOTIADE, B., dr.

Value of multiple examinations in prevention of errors in operative indications in cardiac surgery. Med. intern., Bucur 12 no.12: 1843-1850 D '60.
(HEART--DISEASES diagnosis) (HEART SURGERY)

MARINESKU, Voynya [Marinescu, V.], prof.; MALITSKAYA, Ye. [Maliska, E.]; FOTIADE, B. [Fotiade, B] (Bukharest)

Effectiveness of combined methods in the prevention of erroneous heart surgery. Vest.khir. 85 no.11:84-89 N '60. (MIRA 14:2)

(HEART—SURGERY)

NICOLAU, St. S., acad.; SARATEANU, D.; SURDAN, C.; ATHANASIU, P.; ANAGNOSTE, B.; SORODOC, G.; ILIESCU, C.; RADESCU, R.; MALITCHI, E.

Viral etiology in cardiovascular diseases. III. Thromboangiitis obliterans with migratory phlebitis of rickettsial origin. Studii cerc inframicrobiol 12 no.4:535-541 '61.

1. Institutul de inframicrobiologie al Academiei R.P.R. 2. Membru al Comitetului de redactie si redactor responsabil "Studii si cercetari de inframicrobiologie" (for Nicolau) 3. Membru al Comitetului de redactie "Studii si cercetari de inframicrobiologie" (for Sarateanu).

MALITCHI, E.

NICOLAU, St.S.; SARATEANU, D.; SURDAN, C.; ATHANASIU, P.; ANAGNOSTE, B.; SORODOC, G.; with the collaboration of ILIESCU, C.; RADESCU, R.; MALITCHI, E.

Viral etiology in cardiovascular affections. III. Thromboangiitis obliterans with migratory phlebitis of rickettsial origin. Rev. sci. med. 7 no.1/2:93-97 '62.

1. Member of the Academy of the R.P.R. (for Nicolau).
(THROMBOANGIITIS OBLITERANS) (THROMBOPHLEBITIS)
(RICKETTSIAL DISEASES)

RUMANIA

MALITCHI, Elena, Dr.

Center for Heart Disease Treatment (ASCAR /Centrul de Asistenta a Cardiacilor/)

Bucharest, Viata Medicala, No 16, 1963, pp 1117-1121

"Arterial Hypertension in Adolescents."

(1)

NICOLAU, St. S.; SURDAN, C.; SARATEANU, D.; ATHANASIU, Pierrette; ANAGNOSTE, B.; SORODOC, G.; POPESCU, G.; en collaboration avec ILIESCU, C.; RADESCU, R.; MALITCHI, E.

Study on the rickettsial etiology of various angiopathies. Rev. sci. med. 8 no. 1/2:69-73 '63.

1. Membre de l'Academie de la Republique Populaire Roumaine (for St.S. Nicolau).
(RICKETTSIAL DISEASES) (VASCULAR DISEASES)

NICOLAU, St. S.; SURDAN, C.; SARATEANU, D.; ATHANASIU, Pierrette; SORODOC, G.; POPESCU-DANESCU, Georgeta; BABES, V.; STEFANESCU, I.; ILIESCU, C.; RADESCU, R.; MALITCHI, E.; CADERE, T.; FLORIAN, I.; PARASCHIVESCU, N.; SETLACEK, D.; DUMITRESCU, St.; SILVIU DAN, S.

A study concerning the rickettsial or pararickettsial etiology of some cardiovascular diseases. Rev. sci. med. 8 no.3/4: 151-158 '63.

1. Member of the Academy of the R.P.R. (for Nicolau).
(RICKETTSIAL DISEASES) (ANTIBODIES)
(CARDIOVASCULAR DISEASES) (ENDOCARDITIS)
(PERICARDITIS) (HEART BLOCK) (CORONARY DISEASE)
(THROMBOPHLEBITIS)

ILIESCU, C.C., prof.; MIHAILESCU, V.V.dr.; ENESCU, R. dr.;
PASTIU, V., dr.; SVETZ, M.dr.; SEENGHE, S.dr.; ARON, L., dr.;
CLEJ, V.dr.; MALITCHI, E., dr.; PIRLOG, C.,dr.; RADESCU, R., dr.;
ILIESCU, A., dr.; CHIRILA, O., dr.; CRETU, S.

Natural history of arterial hypertension. Statistical observations on 3800 cases followed up for at least 10 years.
Med inter 15 no. 5:563-571 My '63.

1. Lucrare efectuata la ASCAR, Bucuresti.
(HYPERTENSION)

SOROCHISHIN, A.G.; BARTENEV, G.M.; MALITSKAS, A., red.;
TOLVAYSHENE, B., tekhn. red.

[Manufacture, properties, and structural uses of glass reinforced plastics of continuous molding] Proizvodstvo, svoistva i primenenie v stroitel'stve steklaplastikov nepreryvnogo formovaniia. Vil'nius, TSentr. biuro tekhn. informatsii i propagandy Gos.kom-ta Soveta Ministrov Ministrov Litovskoi SSR po delam stroit. i arkhit., 1963. 71 p. (MIRA 16:10)
(Glass reinforced plastics)

AUTHORS: Rumanova, I.M. and Malitskaya, G.I. SOV/70-4-4-8/34

TITLE: Refinement of the Structure of Astrakhanite By the Method of Phase Weighted Projections

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 4, pp 510-525 (USSR)

ABSTRACT: A prediction of the structure of $Na_2Mg(SO_4)_2 \cdot 4H_2O$ was made in 1958 but did not agree to much better than 0.27 - 0.19 Å with the structure of Zn-astrakhanite described by Giglio (Ref 4). The structure of the Mg-compound has, therefore, been re-determined. The cell dimensions are $a = 11.03$, $b = 8.14$, $c = 5.49$ Å with $\beta = 100^{\circ}40'$, $d_{obs} = 2.25$ g/cm^3 and $Z = 2$. The space group is $P2_1/a = C_{2h}^5$. For the determination 152 F_{hk0}, 245 F_{hkl}, 155 F_{h0l}, 192 F_{h1l} and 180 F_{h2l} non-zero reflexions were used. Signs in the F_{hk0} zone were found by Zachariasen's statistical method. 45 were found definitely and all but 17 of the others by the statistical technique. The $\sigma(x, y)$ electron-

Card1/6

Refinement of the Structure of Astrakhanite by the Method of Phase Weighted Projections

density projection was constructed giving all x,y coordinates, except those of S and O_4 (which are overlapped), fairly well. The 245 hkl reflexions were treated in the same way and the signs of all but 17 were found. The weighted projections:

$$C_1(x, y) = \int_0^c \rho(x,y,z) \cos \frac{2\pi z}{c} dz = \frac{1}{A_c} \sum_{h}^{\infty} \sum_{k}^{\infty} F_{hkl} \cos 2\pi(hx + ky)$$

and

$$S_1(x,y) = \int_0^c \rho(x,y,z) \sin \frac{2\pi z}{c} dz = -\frac{1}{A_c} \sum_{h}^{\infty} \sum_{k}^{\infty} F_{hkl} \sin 2\pi(hx + ky)$$

Card2/6

were constructed giving the z-coordinates by:

Refinement of the Structure of Astrakhanite by the Method of Phase Weighted Projections

$$\frac{2\pi z_j}{c} = \tan^{-1}\left[S_1(x_j,y_j)/C_1(x_j,y_j)\right]$$

except for S and O_4. To find the latter, the phase projections:

$$S_1(x,y,z_S) = \int_0^c \rho(x,y,z)\sin 2\pi/c\ (z - z_S)dz =$$

$$= S_1(x,y)\cos 2\pi z_S/c - C_1(x,y)\sin 2\pi z_S/c \quad \text{and}$$

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Refinement of the Structure of Astrakhanite by the Method of Phase Weighted Projections

$$S_1(x,y,z_{O_4}) = \int_0^c \rho(x,y,z)\sin 2\pi/c\ (z - z_{O_4})dz =$$

$$= S_1(x,y)\cos 2\pi z_{O_4}/c - C_1(x,y)\sin 2\pi z_{O_4}/c$$

were calculated. In $S_1(x,y,z_S)$ the S atom disappears and shows O_4 clearly and in $S_1(x,y,z_{O_4})$ the S atom is visible. These projections also gave independent values of the x and y coordinates of the other atoms again. From a new $\delta(x,y)$ synthesis the remaining signs were found. R_{hk0} for the 152 reflexions was 10.6% without zeros and 13.4% with zeros out to $\sin\Theta/\lambda = 0.85$ Å^{-1}.

Card4/6

Refinement of the Structure of Astrakhanite by the Method of Phase Weighted Projections

The z-coordinates were refined with the $C_2(x,z)$ and $S_2(x,z)$ syntheses. The second layer was chosen to give the best resolution of overlapping. A final $\delta(x,z)$ projection was calculated with R_{hol} = 16.0%, including zeros out to $\sin\theta/\lambda$ = 1.0 $Å^{-1}$. $S_1(x,y)$ and $C_1(x,y)$ were then repeated, the signs of F_{hkl} being calculated from the best coordinates. For the 245 non-zero F_{hkl} reflections out to 0.88 $Å^{-1}$ R_{hkl} equalled 12.3%. The mean error in the final determination of the O parameters is 0.02 Å. It appears to be due mostly to inaccuracies in the intensity measurements. A drawing of the x-y projection and tables of final co-ordinates are given. The Mg-O octahedra are almost regular and the Na-O octahedra are strongly deformed. The S-O bonds are between 1.45 and 1.49 Å, Na-O between 2.33 and 2.39 Å and Na-H_2O, 2.50 - 2.60 Å.

SOV/70-4-4-8/34

Refinement of the Structure of Astrakhanite by the Method of Phase Weighted Projections

Acknowledgments are made to Academician N.V. Belov.
There are 4 figures, 6 tables and 13 references, of which 7 are Soviet, 1 Rumanian, 1 German and 4 international.

ASSOCIATIONS: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc., USSR)
Institut neorganicheskoy khimii SO AN SSSR (Institute of Inorganic Chemistry, S.O., Ac.Sc., USSR)

SUBMITTED: February 2, 1959

Card 6/6

ZAPROMETOV, M.N.; AGAPOVA, Ye.V.; MALITSKAYA, I.Ye.

Determining vitamins P and C in tablets and dragées containing a catechin complex and ascorbic acid. Vit. res. i ikh isp. no.4:207-212 '59. (MIRA 14:12)

1. Institut fiziologii rasteniy im. K.A.Timiryazeva AN SSSR i Shchelkovskiy vitaminnyy zavod.
(VITAMINS--P) (ASCORBIC ACID)
(DRUGS--ADULTERATION AND ANALYSIS)

MALITSKIY, Aaron Il'ich; SMELYANSKIY, V.A., redaktor; GOR'KOVA, Z.D., tekhnicheskiy redaktor

[KU-2A corn combine] Kukuruznyi kombain KU-2A. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1957. 119 p. (MLRA 10:8)
(Corn picker (Machine))

IVANOV, Nikolay Yakovlevich; LEBEDEV, Sergey Sergeyevich; MALITSKIY, Aron Il'ich; FILIPPOV, Aleksandr Il'ich; MIKAEL'YAN, T.S., red.; SAYTANIDI, L.D., tekhn. red.

[Mechanized raising and harvesting of buckwheat and millet] Mekhanizatsiia vozdelyvaniia i uborki grechikhi i prosa. Moskva, Izd-vo M-va sel'.khoz. RSFSR, 1962. 33 p. (MIRA 16:4)
(Buckwheat) (Millet) (Agricultural machinery)

MALITSKIY, A. I. (Engr.)

"New Designs of Corn-Harvesting Combines."

All-Union Conference on Problems of Designing and Products Agricultural Machines (Vsesoyuznaya konferentsiya po voprosam ~~konferentsiya po voprosam~~ konstruirovaniya i proizvodstva sel'skokhozyaystvennykh mashin. Rostov-on-Don, January 1958

Mashinostroitel', 1958, Nr 8, p 46, (USSR)

MALITSKIY, A.N.; SOKOLOVA, N.D., prof., red.; YERMAKOV, M.S., tekhn. red.

[Units of measure of electrical and magnetic magnitudes] Edinitsy izmereniia elektricheskikh i magnitnykh velichin. Moskva, Izd-vo Mosk. univ., 1961. 54 p. (MIRA 15:3)
(Magnetic measurements--Standards)
(Electric measurements--Standards)

GUMANYUK, M.N., kand.tekhn.nauk; MALITSKIY, I.A., inzh.

Magnetoelastic transducer for proportioning skip loads. Gor.zhur. no.2:65 F '64. (MIRA 17:4)

1. Institut avtomatiki Gosplana UkrSSR, Kiyev.

ANDREYEV, G.Ya., kand.tekhn.nauk; DAVIDENKO, N.P., inzh.; MALITSKIY, I.F., inzh.; OSTRENKO, B.S., inzh.; SHAT'KO, I.I., inzh.

Using induction heating in setting and dismantling wheel pairs. Mashinostroenie no.6:67-71 N-D '62. (MIRA 16:2)

1. Khar'kovskiy gornyy institut.
(Induction heating) (Car wheels)

ANDREYEV, G.Ya., kand. tekhn. nauk; MALITSKIY, I.F., inzh.;
DAVIDENKO, N.P., inzh.

Equipment for disjoining fits having a guaranteed tightness.
Mashinostroenie no.1:14-15 Ja-F '63. (MIRA 16:7)

1. Khar'kovskiy gornyy institut.
(Machine-shop practice)

MALITSKIY, I. I, AKSEL'ROD, L. S., MOSKVIN, YE. M., Eng.

Streets - Moscow

Rapid continuous method of road building in Moscow. Gor. khoz. Mosk. 26, No. 6, 1952.

Monthly List of Russian Accessions. Library of Congress, September 1952, UNCLASSIFIED.

ACHKASOV, N.I.; KARPOV, N.A.; MALITSKIY, L.Ya.; ULYUYEV, D.I.

Ballast cleaning machines (ShchOM) are being put into production.
Put' i put. khoz. no.1:16-17 Ja '57. (MLRA 10:4)
(Ballast)

MALITSKIY, L.Ya., inzhener; USHAKOV, S.M., inzhener.

The "Matiza" ballast cleaning machine. Put' i put. khoz. no.2:46 F '57.
(Switzerland--Ballast) (MLRA 10:4)

MALITSKIY, L.Ya.

New method of curve alignment. Put' i put.khoz. 4 no.9:19 S '60.
(MIRA 13:9)

1. Glavnyy mekhanik tresta Rekput'.
(Railroads--Track)

MALITSKIY, L. Ya., inzh.

Track equipment needs modern maintenance and repair centers.
Put' i put.khoz.5 no.2:28-29 F '61. (MIRA 14:3)
(Railroads—Repair shops)

MALITSKIY, N. A .

"Practice of Combining Emergency Watering with Fall and Spring Plowing in Fergana Oblast." Tashkent Agricultural Inst., Tashkent, 1955. (Dissertation for the Degree of Candidate in Agricultural Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

MALITSKIY, N.A., kand.sel'skokhozyaystvennykh nauk

Reversed clover, a valuable crop. Zemledelie 23 no.11:46-50 N '61. (MIRA 14:11)

(Clover)

137-58-6-11332

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

AUTHORS: Malitskiy, O.N., Nenarokomov, Yu.F.

TITLE: Experience With the Concentration of Copper-and-nickel Ores at the Noril'sk Concentrating Plant (Opyt obogashcheniya medno-nikelevykh rud na Noril'skoy obogatitel'noy fabrike)

PERIODICAL: Materialy Soveshchaniya po vopr. intensifik. i usoversh. dobychi i tekhnol. pererabotki medno-nikelevykh i nikelevykh rud, 1956 g. Moscow, Profizdat, 1957, pp 116-129

ABSTRACT: A brief description of a proposed process procedure, its shortcomings, inadequacies of the equipment and component assemblies, and elimination thereof. A description of the development of the process procedures is given; a new combined flotation procedure is presented, as are diagrams of the functioning of the hydrocyclones and of the crusher shops.

A.Sh.

1. Copper-nickel ores--Processing 2. Copper-nickel ores--Flotation
3. Industrial plants--Equipment 4. Industrial plants--Effectiveness

Card 1/1

USHAKOV, V.A., kandidat tekhnicheskikh nauk; KARAGODIN, V.A. inzhener; MORO, A.I., inzhener; KHAZANOV, B.E., inzhener; FEDOROV, B.S., inzhener; MALITSKIY, S.I. inzhener.

Design and building of large size storm sewers. Gor.khoz. Mosk. 27 no.6: 26-30 Je '53. (MLRA 6:6)

(Moscow--Drainage)

MALITSKIY, S.I.

BASS, M.G., inzhener; KARAGODIN, V.L., inzhener; MOLCHANOV, Yu.A., inzhener; MALITSKIY, S.I., inzhener; KHAZANOV, V.Ye., inzhener; USHAKOV, V.S., inzhener.

Collector with driven in sheet-piled walls. Gor.khoz.Mosk. 31 no.9:38-40 S '57. (MIRA 10:9)
(Moscow--Sewers, Concrete)

MALITSKIY,S., inzh.; KURLYAND, G., inzh.

Underpass for pedestrians at the October Square. Na stroi. Mosk. 2 no.8:24-27 Ag '59. (MIRA 12:12)
(Moscow--Underpasses)

MALITSKIY, S.I., inzh.; KURLYAND, G.A., inzh.

New embankments of the Yauza River. Gor.khoz.Mosk. 33 no.1:27-31 Ja '59. (MIRA 12:3)
(Yauza River--Regulation)

MALITSKIY, V.I.

Eliminating troubles in the operation of beet washer and beet pulp mixer. Sakh. prom. 32 no.11:42-43 N '58. (MIRA 11:12)

1.Veidichanskiy sakharnyy zavod.
(Sugar industry--Equipment and supplies)

USSR / Diseases of Farm Animals. Diseases Caused by Protozoa. R

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 7471

Author : Glinka, A. V.; Malitskiy, V. P.
Inst : Moscow Technological Institute of Meat and Dairy Industry
Title : The Use of Potassium Permanganate and Arrhenal for Treating Babesiosis in Cattle

Orig Pub : Sb. rabot. Mosk. tekhnol. in-t myasn. i molochn. prom-sti, 1958, vyp 5, 108-110

Abstract : Two cows with a babesiosis infection (Babesiella bovis) received 5 g dosages of potassium permanganate dissolved in 3 liters of cold water, administered perorally. In one of the cases complete recovery occurred after a single dose, in the other case, after a smaller dose of 3 g of potassium permanganate in 2 liters of water was repeatedly administered two days

Card 1/2

KHOLDIN, S.A., prof.; MALIUGINA, L.L.

Minutes of the 67th Conference of the Scientific Society of Oncologists of Leningrad and Leningrad Province, April 5, 1962. Vop onk. 8 no. 10:117-119 '62. (MIRA 17:7)

1. Predsedatel' Nauchnogo obshchestva onkologov Leningrada i Leningradskoy oblasti, chlen-korrespondent AMN SSSR (for Kholdin).

VOZNYUK, G.S., inzh.; DRUZHININ, M.K., inzh.; MALIVANCHENKO, P.I., inzh.

Testing core lifters on transportation lines. Transp. stroi. 14 no.6:39-40 Je '64. (MIRA 18:2)

MALIVANEK, R.; MORCH, V.

Basic principles and problems of the technology of map making in large scales. p. 101.

GEODETICKY A KARTOGRAFICKY OBZOR. (Ustredni sprava geodesie a kartografie) Praha, Czechoslovakia. Vol. 5, no. 6, June 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, no. 12, December 1959, Uncl.

S/035/62/000/003/028/053
A001/A101

AUTHORS: Klobouček, J., Malivánek, R.

TITLE: Once more on the control of relief plotted on 1:10,000 maps by the stereophotogrammetric method

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 3, 1962, 15, abstract 3G125 ("Geod. a kartogr. obzor", 1961, v. 7/49, no. 7, 133, Czech)

TEXT: These are comments on the V. Pichlik paper (see RZhAstr, 1961, 8G159). 1. Klobouček objects the method of relief control proposed by Pichlik and asserts that stereoplotting of a relief performed on universal instruments cannot be controlled by means of a stereometer. 2. R. Malivánek does not agree with Klobouček and points out that the latter poorly understood the essence of the proposal which consists in the following: Stereometers can be used to determine errors exceeding the limits of established tolerances, but not to estimate the accuracy of stereoplotting of reliefs performed on universal instruments. He points out that Klobouček overlooked preliminary control of stereopairs which

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Once more on the control of relief ...

takes place in practice, as well as the extended experience of other countries employing stereometers.

F. Sharkozi

[Abstracter's note: Complete translation]

Card 2/2

MALIVANEK, Rudolf, inz.

Large scale mapping, an important task of the Czechoslovak geodetic and cartographic services. Geod kart obzor 8 no.8:141-143 Ag '62.

1. Ustredni sprava geodesie a kartografie, Praha.