

YEREMENKO, V. N., AND SOLOMKO, V. P.

Dilatometric Study of Sintering of Bicomponent Metallic Conglomerates  
Tr. In-ta chernov metallurgii AN Ukr SSR, 8, 1954, pp 80-83

The effect of various solubility of components of bicomponent metallic conglomerates on their sintering process was studied. Cu-Ni represented a system with unlimited solubility and Cu-Mo a nonsoluble system. In the case of Cu-Mo mixture, the observed variable sintering speed, depending on the compound of the specimen, confirmed the diffusive character of sintering. Computed activation energy showed that Mo does not participate diffusive processes up to 1,000°C. (RZhFiz, No 5, 1955)

SO: Sum. No. 639, 2 Sep 55

SOLOMKO V. P.

✓ Viscosity as a function of the temperature. V. P.  
Solomko and S. D. Ravikovich. *J. Appl. Chem. U.S.S.R.*  
27, 505-7(1954)(Engl. translation).—See *C.A.* 48, 11139i.  
B. M. R.

SUBJECTS, E.P.

Viscosity as a function of the temperature. V. P. Solomko and S. D. Ravikovich. *Zhur. Priklad. Khim.* 27, 646-8 (1954). — Pospekhov's work (C.A. 44, 7606c) is criticized. The relation  $\eta = f(1/T)$  does not hold near the crit. temp., yet Pospekhov extrapolates his log functions beyond the limiting temp. and deduces from the results a fundamental law. Pospekhov's concept of intersecting points ascribing to them a basic structural significance is without foundation, for any curved line can be represented by intersecting straight lines. As an instance, the  $\log \eta$  vs.  $1/T$  line for  $H_2O$  between 0 and  $150^\circ$  can be represented by 3 intersecting lines. It is concluded that of the many attempts to classify liquids that of Golik (*Ukrain. Khim. Zhur.* 14, 34(1949); C.A. 44, 8721d) remains the only real contribution. I. Bencowitz

91  
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YEREMENKO, V. N. AND SOLOMKO, V. P.

Dilatometric Study of Sintering of Single Component Metallic Conglomerates

Sintering processes of Cu and Ni powders of 60-85-micron granulation, previously compressed into briquets, were studied using Chevenard's of Cu powders was found to obey the law  $\Delta l = mt^n$  for all temperatures ( $\Delta l$  = shrinkage,  $m$  and  $n$  constants) The graphic  $\Delta l(t)$  in logarithmic scale agreed well with Shaler's assumptions (J. Metals, 185, 796, 1949). (RZhFiz, No. 5, 1955)

SO: Sum. No. 639, 2 Sep 55

Solomko, V. P.

8

Investigation of the latent heat of vaporization of liquids.  
II. Compensating microcalorimeter for the measurement of  
the latent heat of vaporization. A. Z. Golik, S. D. Ravikovich,  
V. P. Solomko, and Yu. I. Shimans'kii (T. G. Shevchenko State Univ., Kiev). *Doklady Akad. Nauk*  
*Ukr. S. S. R.* 1955, No. 2, 163-70 (Russian summary).—  
 The calorimeter, having capillaries for the introduction of the solns. and the escape of the vapors and having a Pt-spiral heater, a thermocouple, and a stirrer, is placed in a Dewar flask through which H<sub>2</sub>O from a thermostat is circulated. A fan stirs the air in the Dewar flask. The opposite end of the thermocouple is immersed in the thermostat so that the difference in the temp. is recorded. The evapn. of 8-10 ml. of the liquid is sufficient for a detn. II. A. Z. Golik, S. D. Ravikovich, Yu. I. Shimans'kii, and V. E. Baranovskii. *Ibid.* 271-2 (Russian summary).—The latent heat of evapn. *L* was detd. at 20-80° for the following solns.: (a) MeOH and EtOH in BuOH, (b) PhBr and PhI in PhCl, and (c) C<sub>6</sub>H<sub>6</sub> and C<sub>7</sub>H<sub>8</sub> in C<sub>6</sub>H<sub>6</sub>. *L* of (a) and (b) is a linear function of the concn. *C*. When expressed as kcal./mol. *L* is higher for liquids of higher crit. temp. *t<sub>c</sub>* (cf. *C.A.* 46, 321; 48, 4911f); when expressed as cal./g. the reverse is true. Solns. of *c* show an anomaly in that the curve of *L* vs. *C* passes through a min. at about 20% C<sub>6</sub>H<sub>6</sub>; *L* is higher for liquids with higher *t<sub>c</sub>* regardless of its units.

I. Bencowitz

Smw  
30/5/55

SOLOMKO, V. P.

USER/ Chemistry - Physical chemistry

Card 1/1 Pub. 116 - 7/30

Authors : Golik, A. Z.; Orishchenko, A. V.; Ravikovich, S. D.; Solomko, V. P.; Roshchina, G. P.; and Shimanskiy, Yu. I.

Title : Viscosity, density and critical temperatures of alcohol solutions in monocarboxylic acids

Periodical : Ukr. khim. zhur. 21/3, 318-326, June 1955

Abstract : The viscosity, density and critical temperatures of alcohol solutions were investigated in monocarboxylic acids in which the chemical esterification reaction usually takes place. The general laws governing the concentration and thermal dependence of the characteristics mentioned and the laws governing the activation energy of the viscous flow and specific volumes were established. It is shown that in the case of solutions, the components of which react intensively between themselves, and that the concentration and thermal dependences are also subject to other more complicated laws. Nine Russian and USSR references (1877-1955). Graphs.

Institution : Acad. of Sc., Ukr. SSR., The L. V. Pisarzhevskiy Inst. of Phys. Chem. and the T. G. Shevchenko State Univ., Kiev

Submitted : December 16, 1954

SOLOMKO, V. P.

✓ Viscosities and critical temperatures of aqueous solutions of alcohols and monocarboxylic acids. A. Z. Golik, A. V. Orshchenko, S. D. Ravikovych, G. P. Koshchina, V. P. Solomko, and Yu. I. Shimanski (T. G. Shevchenko State Univ., Kiev). *Ukrain. Khim. Zhur.* 21, 490-3 (1955) (in Russian); cf. C.A. 48, 4011e. — Crit. temp. varies linearly with percentage of H<sub>2</sub>O for EtOH, PrOH, and H<sup>+</sup>Ac solns. For PtCO<sub>2</sub>H solns. there is a min. at 25% H<sub>2</sub>O. Viscosity-concn. curves show max. that decrease with rising temp. as H-bonded structures are broken down. Graphs are given. Graphs are also given for A and B/R in the equation  $\text{viscosity} = A \exp(B/RT)$  against percentage H<sub>2</sub>O. B/R has a max. and A a min. John H. Scott

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~~Viscosity and critical-temperature determinations of ternary solutions of alcohols-acids-water. A. Z. Golik, A. V. Orshchenko, S. D. Ravikovich, V. P. Solomko, and Yu. I. Shimanskiy. (T. G. Shevchenko State Univ., Kiev) *Ukrain Khim. Zhur.* 21, 870-80 (1955) (in Russian); cf. C.A. 50, 4592c.—The viscosity and crit. temps. of water, EtOH, PrOH, AcOH, and butyric acid were studied. The viscosity isotherms in each system intersect in such a way that up to one concn. one isotherm lies above the other two, and at higher concn. is located below. At a given temp., different concns. of the same components have the same viscosities. The no. of such solns. reaches 5 for the water-butyric acid-propanol system. W. M. Sternberg.~~

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*den*  
*PM*



Solomko, V.P.

POSPEKHOV, D.A.

Answer to the critical note of V.P.Solomko, and S.D.Ravikovich.  
Zhur. prikl. khim. 28 no.4:445-447 Ap '55. (MIRA 8:7)  
(Chemistry, Organic) (Solomko, V.P.) (Ravikovich, S.D.)

*Deuterium*  
RAVIKOVICH, S.D.; SOLOMKO, V.P.

Investigation of the viscosity and critical temperatures of  
certain deuterium compounds and their solutions. Ukr. khim.  
zhur. 24 no.1:7-12 '58. (MIRA 11:4)

1. Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko 1  
Kiyevskiy meditsinskiy institut im. A.A. Bogomol'tsa.  
(Viscosity) (Deuterium compounds)

GOLIK, A.Z.; SOLOMKO, V.P.

Investigation of the physical properties of the water - acetone -  
alcohol system. Part 1: Water - acetone-ethanol system. Ukr.khim.zhur.  
24 no.6:734-740 '58. (MIRA 12:3)

1. Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko.  
(Acetone) (Ethyl alcohol) (Systems (Chemistry))

GOLIK, A.Z.; SOLOMKO, V.P.

Investigation of the physical properties of the system water-  
acetone-alcohols. Part 2: System water-acetone-butanol. Ukr.  
khim.zhur. 25 no.1:40-44 '59. (MIRA 12:4)

1. Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko.  
(Water) (Acetone) (Butyl alcohol)

SOLOMKO, V.P.; KULINICH, M.G.

Physical properties of the systems water - acetone - alcohols.  
Part 3: Viscosity of the four-component system water - acetone -  
butanol - ethanol. Ukr. khim. zhur. 26 no.6:707-715 '60.  
(MIRA 14:1)

1. Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko.  
(Acetone) (Butyl alcohol)  
(Ethyl alcohol)

SOLOMKO, V.P.; SMEYUN, S.M. [Smium, S.M.]

Investigation of the viscosity of the ternary system water - ethanol - benzene in the critical region. Dop. AN URSR no. 5:649-651 '61. (MIRA 14:6)

1. Kiyevskiy gosudarstvennyy universitet. Predstavleno akademikom AN USSR Yu. K. Delimarskim [Delimars'kiy, IU.K.].  
(Viscosity)  
(Ethyl alcohol)  
(Benzene)

PANASYUK, V.D.; SOLOMKO, V.P.; REYTER, L.G.

Effect of cis-trans isomerism on the yield kinetics of complex-bound chlorine in solutions of certain trivalent cobalt complexes.  
Zhur.neorg.khim. 6 no.9:2019-2024 S '61. (MIRA 14:9)

1. Kiyevskiy gosudarstvennyy universitet im. T.G.Shevchenko.  
(Chlorine compounds) (Cobalt compounds) (Isomerism)

SOLOMKO, V.P.; GALADZHIY, O.F.

Physical properties of the systems water - acetone - alcohols.  
Part 4: Refractive index, density, and specific volume of the  
system water - acetone - ethanol - butanol. Ukr. khim. zhur. 27  
no.2:160-167 '61. (MIRA 14:3)

1. Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko.  
(Acetone) (Ethyl alcohol) (Butanol)



32552  
S/190/62/004/001/014/020  
B110/B101

Filled polymers. V. Introduction ...

Mixing of the aqueous bentonite paste with caprolactam yielded a homogeneous, filled polymer. In the present case, polycondensation of a mixture of filler and caprolactam separated from the methanolic monomeric solution took place. Tabular samples were cut from cylindrical blocks and the monomer was washed out by 10-hr boiling in water. The following molecular weights were viscosimetrically determined from solutions in 40% H<sub>2</sub>SO<sub>4</sub>:

Degree of bentonite amination in microequivalents per g	0	500	800	1000
Molecular weight of polycaprolactam, in thousands	21.4±1.4	21.4±3.5	24.8±1.6	30.8±1.6

The degree of polymerization of polycaprolactam is not reduced by introducing fillers. A small increase is caused by neutralizing adipic acid acting as stabilizer by binding with amine adsorbed on bentonite. The

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B110/B101

Filled polymers. V. Introduction ...

thermomechanical curves for pure and filled polycaprolactam completely coincided. This is in agreement with V. A. Kargin's and T. I. Sogolova's data (Ref. 6: Vysokomolek. soyed., 2, 1093, 1960). Dependence of hardness of polycaprolactam on the content of I having a degree of amination of 800 microequivalents/gram is:

Filler content, %	0	1	3	5	8
Hardness, kg/mm <sup>2</sup>	14.1	15.4	15.8	18.7	19.1

For the first 5%, the maximum increase in hardness caused by the active filler can be observed. Comparison between differently aminated I showed for 10% filler content:

X

Degree of amination, microequivalents/gram	500	800	1000
Hardness, kg/mm <sup>2</sup>	17.0	16.0	16.8

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Filled polymers. V. Introduction ...

<sup>32352</sup>  
S/190/62/004/001/014/020  
B110/B101

O. D. Kurilenko and R. V. Mikhalyuk (Ref. 7: Kolloidn. zh., 21, 195, 1959) found that low and high amination of bentonite led to a rise in heat of wetting with water. For maximum filler activity, not a completely hydrophobic but a somewhat polar surface is required. Aminated bentonite is an active filler of amorphous and crystalline polymers. There are 1 figure, 1 table, and 7 references: 5 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: I. W. Jordan, F. F. Maleyev, J. Polymer Sci., 31, 301, 1958; A. J. Jurzhenko, J. Phys. Colloid, Sci., 53, 294, 1949. X

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko  
(Kiyev State University imeni T. G. Shevchenko)

SUBMITTED: February 2, 1961

Card 4/4

SOLOMKO, V.P.; PANASYUK, V.D.; ZELENSKAYA, A.M.

Mutual solubility in the four-component system water - acetone -  
ethanol - butanol. Zhur.prikl.khim. 35 no.3:628-633 Mr '62.  
(MIRA 15:4)

1. Kiyevskiy gosudarstvennyy universitet.  
(Acetone) (Ethyl alcohol) (Butyl alcohol)

USKOV, I.A. [Uskov, I.O.]; SOLOVKO, V.P.; KUSHITSYNA, T.A. [Kusnitsyna, T.O.];  
PELISHENKO, S.S.

Reinforcement of capron fiber by means of modified bentonite.  
Dop. AN URSR no.6:798-801'63 (MIRA 17:7)

1. Kiyevskiy gosudarstvennyy universitet. Predstavleno akademikom  
AN UkrSSR F.D. Ovcharenko.

ACCESSION NR: AP4011977

S/0073/64/030/001/0086/0090

AUTHORS: Tarasenko, Yu. G.; Uskov, I.A.; Solomko, V.P.

TITLE: Effect of kaolin on the properties of polymethylmethacrylate and polystyrene

SOURCE: Ukrainskiy khimicheskij zhurnal, v. 30, no. 1, 1964, 86-90

TOPIC TAGS: polymer, filled polymer, kaolin, polystyrene, polymethylmethacrylate, hardness, glass point, fluidity colloidal kaolin

ABSTRACT: The introduction of kaolin to polymethylmethacrylate increases its hardness, glass point, fluidity and destruction. However, addition of up to 10-15% kaolin to polystyrene causes practically no change in its properties in comparison with the pure polymer. The activity of the filler in polymethylmethacrylate is explained as due to the formation of strong hydrogen bonds which do not develop in the case of polystyrene. With greater loading with

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ACCESSION NR: AP4011977

filler the polymeric materials lose their fluidity due to the formation of colloidal structures. Orig. art. has: 4 figures.

ASSOCIATION: Kievskiy gosudarstvennyy universitet im. T.G. Shevchenko (Kiev State University)

SUBMITTED: 07Dec62

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: MA, PH

NO REF SOV: 011

OTHER: 001

Card

2/2

ACCESSION NR: AP4022112

S/0073/64/030/003/0305/0308

AUTHOR: Solomko, V. P.; Poletukha, V. V.; Uskov, I. A.; Zhigotskiy, A. G.

TITLE: Interaction of polymers with fibrous fillers

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 30, no. 3, 1964, 305-308

TOPIC TAGS: filled polymer, fiberglass filler, polystyrene, polymethylmethacrylate, filled polystyrene, filled polymethylmethacrylate, softening temperature, fiberglass polymer compatibility, fiberglass polymerophilicity, silicone treated fiberglass

ABSTRACT: The effect of fiberglass filler concentration of the softening temperature of polystyrene (PS) and polymethylmethacrylate (PMMA) of different molecular weights (PS-80,000, PMMA-720,000) was investigated. Introduction of fiberglass (7 microns diameter, 3 microns long delubricated at 450C for 3 hours) into the polymer films significantly raised their softening temperatures, even at low filler concentrations: the effect being greater in PMMA than in PS (compare

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ACCESSION NR: AP4022112

figs. 1 and 2). This is attributed to the greater similarity in polarity and the possibility of hydrogen bond formation between the PMMA and the fiberglass. The addition of fiberglass treated with organosilicon compounds to PS film causes a more significant increase in its softening temperature (by 8-10C) in comparison with PS film filled with untreated glass. This is attributed to increasing the polymerophilicity of the fiberglass and its compatibility with polymers. Orig. art. has: 2 figures

ASSOCIATION: Kievskiy gosudarstvennyy universitet im. T. G. Shevchenko  
(Kiev State University)

SUBMITTED: 09Feb63

DATE ACQ: 09Apr64

ENCL: 02

SUB CODE: MT

NO REF SOV: 009

OTHER: 000

Card 2/4

L 26104-65 EPF(c)/EPR//EWP(j)/EWT(m)/T Pc-4/Pr-4/Ps-4 RPL RM/WH

ACCESSION NR: AP4047199

S/0190/64/006/010/1768/1772

37  
28  
B

AUTHOR: Uskov, I. A.; Tarasenko, Yu. G.; Solomko, V. P.

TITLE: Effect of the degree of dispersion of clay fillers on the properties of amorphous polymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 10, 1964, 1768-1772

TOPIC TAGS: filler particle size, clay filler, amorphous polymer, filled amorphous polymer, polymer strength, glass temperature, yield point, polymethylmethacrylate, polystyrene

ABSTRACT: The effect of active and inert clay fillers (kaolin & bentonite) of varying particle size on the glass temperature and mechanical properties of amorphous polymers (polymethylmethacrylate & polystyrene) was investigated. The results illustrated in Fig. 1 of the Enclosure show that a decrease in the particle size of active fillers increases the hardness and glass temperature, and also decreases somewhat the impact toughness and static bending strength of the polymer. An increase in size of inert fillers produces a considerable decrease in durability and thermal characteristics of the polymers. To obtain strong, filled, amorphous polymers, a strong interaction between the surface of

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L 26104-65

ACCESSION NR: AP4047199

the fillers and the polymeric medium and a high degree of dispersion must be obtained.  
"S. O. Mel'nikova took part in the experimental work." Orig. art. has: 2 graphs and  
5 photomicrographs. 2

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko (Kiev  
State University)

SUBMITTED: 22Nov63

ENCL: 02

SUB CODE: MT, GC

NO REF NOV: 007

OTHER: 003

Card

2/A

L 26104-65  
ACCESSION NR: AP 4047199

ENCL 01

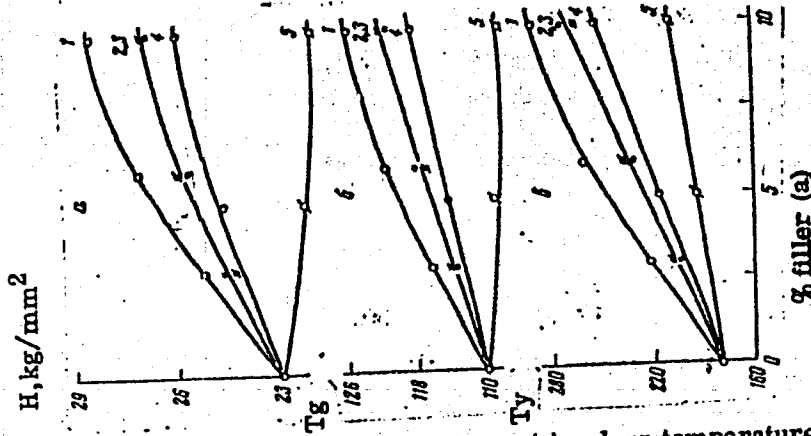


Fig. 1 - Effect of filler content on: A) the hardness (a), glass temperature (b) and yield point (c) of polymethylmethacrylate; B) the impact toughness (a) and static bending strength (b) of polymethylmethacrylate (solid lines) and polystyrene (dotted lines). 1-kaolin, 8  $\mu$ ; 2-kaolin, 35  $\mu$ ; 3- Na bentonite, 35  $\mu$ ; 4- bentonite aminated to 440  $\mu$ eq/g, 7.5  $\mu$ ; 5- bentonite aminated to 200  $\mu$ eq/g, 30  $\mu$ .

Card 3/4

L 26104-65  
ACCESSION NR: AP4047199

ENCL: 02

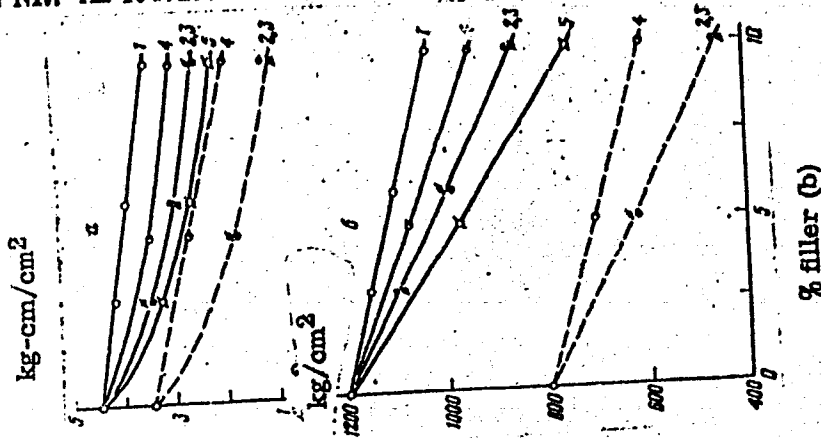


Fig. 1 - Effect of filler content on: A) the hardness (a), glass temperature (b) and yield point (c) of polymethylmethacrylate; B) the impact toughness (a) and static bending strength (b) of polymethylmethacrylate (solid lines) and polystyrene (dotted lines). 1-kaolin, 8 μ; 2-kaolin, 35 μ; 3- Na bentonite, 35 μ; 4- bentonite aminated to 440 μeq/g, 7.5 μ; 5- bentonite aminated to 200 μeq/g, 30 μ.

Card 4/4

L 20493-65 EWP(j)/EWT(m) Pc-4 AFETR/ESDT RM  
ACCESSION NR: AP5001486 8/0190/64/006/012/2201/2201

AUTHOR: Solomko, V. P.; Uskov, I. A.; Molokoyedova, T. A.;  
Pelishenko, S. S. B

TITLE: Effect of filler on morphological forms and properties of polycaprolactam

SOURCE: Vysomolekulyarnyye soyedineniya, v. 6, no. 12, 1964, 2201

TOPIC TAGS: polycaprolactam, Nylon, filler, morphology, kaolin, mechanical property

ABSTRACT: A laboratory study has been made of the effect of kaolin filler (0.5—20%) on morphological forms in and properties of polycaprolactam under various conditions of heat treatment and filler addition. Polycaprolactam was used in the form of block specimens and fibers. Heat treatment was carried out in the 180—280C range in 20C increments. It was found that the kaolin changed the morphology of polycaprolactam: spherulites decreased in size and the filler concentrated in interspherulitic boundaries. As a result, an improvement in certain physical and mechanical properties was observed.

Card 1/2

L 38098-65 EWT(m)/EPF(c)/EPR/EMP(j)/T Pc-4/Pr-4/Ps-4 WW/RM  
ACCESSION NR: AP5005916 S/0185/65/010/002/0211/0218

AUTHOR: Solomko, V. P.; Zhyhots'kyy, O. H. (Zhigotskiy, A. G.); Uskov, I. O. 3/3  
(Uskov, I. A.); Kuchynka, M. Yu. (Kuchinka, M. Yu.) 15 P

TITLE: Investigation of the mechanical properties of reinforced polymers. I.  
Mechanical properties of polystyrene, polymethylmetacrylate, and polyethylene re-  
inforced with fiberglass. 15 P

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 2, 1965, 211-218

TOPIC TAGS: polymer, polystyrene, polymethylmetacrylate, polyethylene, strength measurement, fiberglass reinforcement

ABSTRACT: In view of the increasing use of fiber-reinforced polymer materials, the authors investigated the concentration dependence of the initial modulus of elongation, the rupture stress, and the elongation of high-pressure films of block polystyrene, polymethylmetacrylate, and polyethylene reinforced with fiberglass, the content of which amounted to 1, 2.5, 5, 10, and 20% by weight. The polymers were prepared from toluol solutions by a procedure described earlier (Ukr. khim. zh. v. 30, 305, 1964; Izv. vuzov, Tekhn. legk. prom. no. 5, 11, 1964).

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L 38098-65  
ACCESSION NR: AP5005916

2

The rupture machine used in the tests was also described earlier (Ukr. fizychn. zh. v. 7, no. 12, 1318, 1962). The results indicate that both the nature of the polymer and the chemical interaction between the polymer and the surface of the reinforcing material affect the mechanical properties of reinforced films prepared from solutions of the corresponding polymers. A hypothesis is advanced that the structure made up of the reinforcing fibers and the polymer adjacent to it exerts a definite influence on the mechanical properties, improving the latter, as can be seen from the concentration dependence of the initial modulus of tension. It is also suggested that the reinforcement of polyethylene films with fiberglas is due both to the uniform distribution of the stresses over the cross section of the sample and to the change in the course of the relaxation processes. Orig. art. has: 6 figures.

ASSOCIATION: Kiyivskyy derzhuniversytet im. T. G. Shevchenka  
(Kiev State University)

SUBMITTED: 15 May 64

ENCL: 00

SUB CODE: MT, OC

NR REF SOV: 020

OTHER: 002

*me*  
Card 2/2



I 64999-65 ENT(m)/EPF(c)/ENP(j)/T/ETC(m) WW/RM

ACCESSION NR: AP5013478

UR/0185/65/010/005/0549/0557

AUTHOR: <sup>44,55</sup> Solomko, V. P.; <sup>44,55</sup> Zhyhots'kyi, O. H. (Zhigotskiy, A. G.); <sup>44,55</sup> Uskov, I. O. (Uskov, I. A.); <sup>44,55</sup> Kuchynka, M. Yu. (Kuchinka, M. Yu.)

TITLE: Mechanical properties of filled polymers. II. Effect of deformation rate on the mechanical properties of fiberglass-filled polystyrene, polymethylmethacrylate and polyethylene

SOURCE: Ukrayins'kyi fizychnyy zhurnal, v. 10, no. 5, 1965, 549-557

TOPIC TAGS: material deformation, solid mechanical property, polymer, polystyrene, polymethylmethacrylate, polyethylene, fiberglass, filler

ABSTRACT: The initial modulus of elongation, rupture stresses and elongation were studied as a function of filler concentration at various rates of deformation (0.3, 3 and 30 mm/min) in fiberglass-filled polystyrene, polymethylmethacrylate and polyethylene. In contrast to the case of pure polymers, a reduction in the stretching rate increases the rupture stress of filled polystyrene and polymethylmethacrylate below the glass transition temperature, and reduces the rupture stress of polyethylene above the glass transition temperature. A reduction in the stretching rate

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L 64999-65

ACCESSION NR: AP5013478

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increases the initial modulus of elongation for all three systems. The effect of the deformation rate on the mechanical properties of fiberglass-filled polystyrene, polymethylmethacrylate and polyethylene films is explained (based on the relaxation character of deformation in the filled polymers) by the structure of the filler and the redistribution of stresses through the cross section of the specimen. Orig. art. has: 6 figures, 3 tables.

ASSOCIATION: Kyivs'kyi derzhuniversitytet im. T. H. Shevchenka (Kiev State University)

SUBMITTED: 28Sep64

ENCL: 00

SUB CODE: MT, AS

NO REF SOV: 010

OTHER: 001

Card 2/2

L 4925-66 EWP(e)/EWT(m)/EPF(c)/EWP(1)/EWP(j)/T RPL WW/RM/WH

ACC NR: AP5026581

SOURCE CODE: UR/0073/65/031/010/1071/1073

AUTHOR: <sup>44.5</sup>Uskov, I.A.; <sup>44.5</sup>Solomko, V.P.; <sup>44.5</sup>Chemeris, N.P.

ORG: Kiev State University im. T.G. Shevchenko <sup>44.5</sup>(Kiyevskiy gosudarstvennyy universitet) <sup>46</sup><sub>3</sub>

TITLE: Dispersive acceleration of radical polymerization <sup>7.44.55</sup>

SOURCE: Ukrainsky khimichesky zhurnal, v. 31, no. 10, 1965, 1071-1073

TOPIC TAGS: radical polymerization, vibration effect, polymethyl methacrylate, hydrogen bonding

ABSTRACT: The dispersive acceleration of radical polymerization of vinyl monomers was studied during the vibration milling of montmorillonite. Cause of the acceleration is a facilitation of the radical decomposition of the adsorbed initiator under the influence of the impact loads. A rise in temperature decreases the effectiveness of the phenomenon as a result of a decreased adsorption of the initiator (benzoyl peroxide) and an acceleration of its decomposition in the homogeneous phase. When montmorillonite is dispersed in a medium of vinyl monomers, no chemical grafting of the polymer to the solid surface takes place. Polymethyl methacrylate, not extractable with boiling benzene, forms as a result of the binding of its macromolecules to the hydroxyl-containing surface of montmorillonite by hydrogen-bond forces. A lowering of temperature promotes the formation of bound polymethyl methacrylate, since under these conditions a larger amount of polymer is formed in the immediate vicinity of the solid surface. Orig. art. has: 3 figures and 1 table.

SUB CODE: GC / SUBM DATE: 29May65 / ORIG REF: 004 / OTH REF: 003

Card 1/1

UDC 541.64

0701 1389

L 11606-66 EWT(m)/T/LWP(j) RM

ACC NR: AP6001504

(A)

SOURCE CODE: UR/0191/65/000/012/0060/0062

AUTHORS: Pelishenko, S. S.; Uskov, I. A.; Solomko, V. P.

30  
B

ORG: none

5.114

TITLE: Change of mechanical properties and water-resistance of polycaprolactam with introduction of dispersion fillers /

SOURCE: Plasticheskiye massy, no. 12, 1965, 60-62

TOPIC TAGS: caprone, water, tensile strength, hardness, filler, kaolin

ABSTRACT: Preparation of filled polycaprolactams (I) with improved mechanical and water-resistant properties is described. Dry filler, (kaolin, mountain cork, or perlite) was mixed with caprolactam containing initiator and molecular weight stabilizer (adipic acid), and was polymerized in open ampules under a stream of inert gas. Smaller amounts of filler (< 8%) were added as aq. suspensions to heated (270C), partially polymerized caprolactam, thus assuring uniform distribution of the filler. Test samples were prepared by forming I under pressure at 260-270C as plates 10 x 15 x 3-mm or dumbbells 50 mm long and 10 x 3 across. Hardness, tensile strength, bending strength, specific impact toughness and water absorption were the properties measured. It was established that all fillers increased the hardness and lowered the tensile strength of I as can be seen in Fig. 1. Specific impact toughness remained unchanged with the content of kaolin up to 8%; then it dropped sharply.

Card 1/2

UDC: 678.01.53:675.126

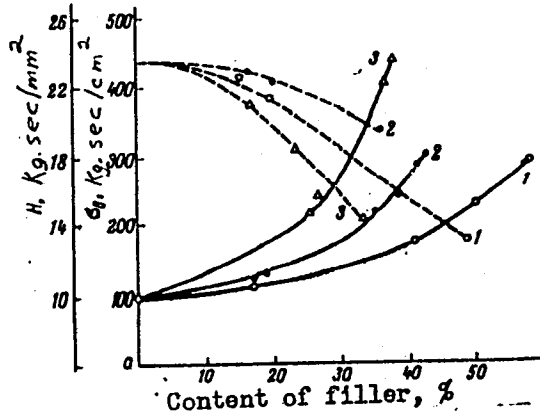
2

L 11,606-66

ACC NR: AP6001504

0

Fig. 1. Hardness  $H$  (—) and tensile strength  $\sigma_B$  (---) of filled polycaprolactam as functions of filler content:  
1 - kaolin; 2 - perlite;  
3 - mountain cork.



Bending strength dropped rapidly, even with small additions of filler. All fillers increased water-resisting properties of I. Orig. art. has: 4 figures, 1 table, and 3 equations.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001

Card 2/2

BELEVTSSEV, G.A.; GAVRILENKO, N.G.; GRINENKO, I.M.; KOROSTIK, P.O.;  
KOTEL'NIKOV, I.V.; KRASAVTSEV, N.I., kand. tekhn. nauk;  
MISHCHENKO, N.M.; POPOV, N.N., kand. tekhn. nauk; SEMIK, I.P.,  
kand. tekhn. nauk; TOTSKIY, G.P., kand. tekhn. nauk; SHESTOPALOV,  
I.I.; Primali uchastiye: SOLDATKIN, A.I.; SOLOMKO, V.P.;  
SOLOMATIN, A.M.; BOLOTSKIY, D.V.; ZAPOROZHETS, N.P.;  
BESSCHASTNIY, A.Ye.; SHVETS, N.Kh.; LIKHUNIN, S.D.; SHUMSKIY, L.B.;  
VAS'KOVICH, N.A.; YEROKHINA, A.I.; GELYUKH, B.A.

Desulfuration of pig iron in a fast-revolving and continuous  
drum. Met. i gornorud. prom. no.4:3-5 JI-Ag '65.

(MIRA 18:10)

L 21193-66 EWT(m)/EWP(j)/T/ETC(m)-6

WW/GS/RM

ACC NR: AT6006248

(A)

SOURCE CODE: UR/0000/65/000/000/0077/0084

AUTHOR: Solomko, V. P.; Uskov, I. A.

56  
1341

ORG: Kiev State University (Kievskiy gosudarstvennyy universitet)

TITLE: Thermomechanical investigation of filled polymers <sup>15 filled</sup>

SOURCE: AN UkrSSR. Modifikatsiya svoystv polimerov i polimernykh materialov (Modification of the properties of polymers and polymeric materials). Kiev, Naukova dumka, 1965, 77-84

TOPIC TAGS: polymer, solid mechanical property, synthetic material, polymer, textolite, polymer structure, fiber glass, relaxation process

ABSTRACT: The effect of a concentration of glass powder and fiber glass fillers on vitrification, softening, and flow temperatures of polymethylmethacrylate, poly-styrene, polyvinylbutylaldehyde, polyvinylacetate, polyvinylalcohol, and polyethylene was investigated. The measurements were made using sheets of these polymers filled with 0-60 wt % of glass powder and fiber glass. The fiber glass filler threads were 3 mm in length and the glass powder was smaller than 360 mesh. The in-

15

Card 1/3

2

L 21193-66

ACC NR: AT6006248

fluence of the filler on surface hardness, structure, and relaxation properties of a polymer is reflected in the vitrification temperature. The degree of intimate interaction between the filler and the polymer affects primarily the deformation characteristics of the polymer-filler system and it is reflected in the softening temperature of the system. Softening temperature (in °C) of a polymer sheet as a function of filler concentration is shown in table 1. The temperatures (in °C) corresponding to 1% deformation of sheets of polyethylene with various concentrations of fillers are also given. Orig. art. has: 2 tables.

Card 2/3 *dk*



L 21193-66  
 ACC NR: AT6006248

TABLE 1 \*\*sheets prepared by pressing

System	Filler concentration, wt %								
	0	2.5	5	10	20	30	40	50	60
PS + FG	74	86	94	108	123	-	-	-	-
PS + GP*	74	-	73	74	77	-	-	-	-
PMMA + FG	65	73	84	123	137	-	-	-	-
PMMA + GP*	65	65	64	65	64	-	-	-	-
PMMA + GP**	70	-	71	70	72	-	63	-	-
PVBA + FG	57	70	77	90	105	71	73	72	-
PVBA + GP*	57	-	57	58	58	-	-	-	-
PVA + FG	32	47	56	70	73	-	75	-	88
PVA + GP*	32	-	32	33	32	-	-	-	-
PVAL + FG	93	102	113	124	154	-	42	-	47
PVAL + GP*	93	-	-	91	92	-	-	-	-
PE + FG	71	70	71	71	71	-	-	-	-
PE + GP*	71	70	71	71	71	71	-	-	-
							70	-	71

SUB CODE: LL/  
 Card 3/3

SUBM DATE: 06Oct65/

\*sheets prepared from a solution  
 ORIG REF: 017/  
 OTH REF: 001

L 21823-66 EWP(j)/EWT(m)/ETC(m)-6/T IJP(c) RM/WW/GS

ACC NR: AT6006251

SOURCE CODE: UR/0000/65/000/000/0100/0109

AUTHOR: Solomko, V. P.; Zhigotskiy, A. G.; Uskov, I. A.

ORG: Kiev State University (Kievskiy gosudarstvennyy universitet)

48  
B+1

TITLE: Mechanical properties of filled plasticized polymer sheets

15,445

SOURCE: AN UkrSSR. Modifikatsiya svoystv polimerov i polimernykh materialov (Modification of the properties of polymers and polymeric materials). Kiev, Naukova dumka, 1965, 100-109

TOPIC TAGS: solid mechanical property, polymer, synthetic material, glass textile, structural plastic

ABSTRACT: The effect of the concentration of fiber glass and dibutylphthalate fillers on breaking stress  $\sigma_p$ , elongation  $\epsilon_p$ , and initial modulus of elongation E of polystyrene and polymethacrylate sheets was examined at 3 and 30 mm/min stretching rates. Sheets of polystyrene ( $8 \cdot 10^4$  mol wt) and polymethylmethacrylate ( $7.2 \cdot 10^5$  mol wt) containing 0, 0.5, 1, 2.5, 5, 10, 15 and 20 wt % of alkali-free fiber glass

15

15

2

Card 1/2

L 21823-66

ACC NR: AT6006251

0

(8 microns in diameter and 3 mm in length) and, also, sheets of polystyrene with polymethylmethacrylate containing 0, 0.5, 1, 2.5, 5, 10, 15 and 20 wt % of fiber glass and 5 and 20 wt % of dibutylphthalate plasticizer were used. The polystyrene and polymethylmethacrylate sheets were prepared by precipitation with methyl alcohol from their toluene solutions. The changes in  $\sigma_p$ , elongation  $\epsilon_p$ , and initial modulus of elongation  $E$  for polystyrene are graphed. Orig. art. has: 4 figures, 2 tables.

SUB CODE: 11/

SUBM DATE: 06Oct65/

ORIG REF: 010/

OTH REF: 000

Card 2/2 nst

L 17717-66 EPF(n)-2/EWA(h)/EWP(j)/EWT(m)/T/EWA(1) GG/RM/WW

ACC NR: AP6003409 (A) SOURCE CODE: UR/0190/66/008/001/0026/0030

AUTHORS: Uskov, I. A.; Tertykh, L. I.; Solomko, V. P.; Polishchuk, Yu. N. 54  
B

ORG: Kiev State University im. T. G. Shevchenko (Kiyevskiy gosudarstvennyy universitet); Institute of Physical Chemistry, AN UkrSSR (Institut fizicheskoy khimii AN UkrSSR)

TITLE: Radiation polymerization of methylmethacrylate and styrene in the presence of mineral fillers 44.55 19

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 26-30

TOPIC TAGS: radiation polymerization, styrene, methylmethacrylate, gamma radiation

ABSTRACT: Polymerization of styrene (I) and methylmethacrylate (II) in contact with mineral fillers (silica gel, kaolin, asbestos, glass fiber), inert under ordinary conditions, was studied for the reaction to  $\gamma$ -radiation. It was established that: 1) mineral fillers accelerate the polymerization process and increase molecular weight of homopolymer; 2) during ionization irradiation a grafted polymer is formed on the surface of the filler and held strongly by chemical bond forces; 3) with increased temperature, the yield of homopolymer and the

Card 1/2

UDC: 66.095.26+678.744+678.746 2

L 17717-66

ACC NR: AP6003409

grafting of the polymer increases, indicating the free radical character of the process. It was possible to obtain a double-layer grafting of polystyrene to the surface of the mineral filler to which polymethylmethacrylate was grafted previously. The amount of the grafted polystyrene increases when the amount of polymethylmethacrylate decreases. This is explained by a destruction of the polymer matrix occurring during repeated irradiation. Orig. art. has: 4 tables.

SUB CODE: 07/ SUBM DATE: 05Feb65/ ORIG REF: 012/ OTH REF: 006

Card 2/2 nst

SOLOMKO, V.P.; MOLOKOYEDOVA, T.A.; USKOV, I.A.

Effect of fillers on the supermolecular structure and mechanical properties of crystalline polymers. Part 1. Vysokom. soed. 8 no. 1:104-108 Ja '66 (MIRA 19:1)

1. Kiyevskiy gosudarstvennyy universitet imeni Shevchenko.  
Submitted February 17, 1965.

L 18023-66 EWP(e)/EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM/WH  
ACC NR: AP6006989 (A) SOURCE CODE: UR/0190/66/008/002/0363/0363

AUTHOR: Uskov, I. A.; Pelishenko, S. S.; Solomko, V. P.; Borovikova, S. M. 39 B

ORG: none

TITLE: Chemical grafting of polycaproamide to glass fiber 15.44.55

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 363

TOPIC TAGS: nylon, graft copolymer, glass reinforced plastic

ABSTRACT: A study has been made of the graft polymerization<sup>1</sup> of polycaprolactam to glass fiber. It is noted that glass fiber-reinforced polycaprolactams<sup>2</sup> which have received widespread application, are usually prepared by introducing the fiber into the polymer melt. Introduction of the fiber into the polymerizing system was of great interest since a stronger fiber-binder interaction is thereby rendered possible. Chopped alkali-free glass fiber, 11 μ in diameter, nonlubricated or finished with AGM or chromolan coupling agent, was used. The resultant reinforced plastic had improved mechanical properties and lesser swelling in water and hence better service properties. Extraction proved that a considerable portion of the polycaprolactam is in fact grafted to the fiber. 7(SM)

SUB CODE: 11, 07/ SUBM DATE: 07Sep65/ ATD PRESS: 4212

Card 1/1 vmb

UDC: 541.64+678.675

ACC NR: AP6003420 SOURCE CODE: UR/0190/66/003/01/0101/0103

AUTHOR: Solomko, V. P.; Molokoyedova, T. A.; Uskov, I. A.

ORG: Kiev State University im. T. G. Shevchenko (Kiyevskiy gosudarstvennyy universitet)

TITLE: Effect of fillers on the morphological forms and mechanical properties of crystalline polymers

SOURCE: *Vysokomolekulyarnyye soyedineniya*, v. 8, no. 1, 1966, 104-108 and insert facing page 104

TOPIC TAGS: crystalline polymer, solid mechanical property, filler, polymerization, spherulite, bending strength

ABSTRACT: A study directed toward improving the mechanical properties of crystalline polymers by means of fillers has been carried out at Kiev State University. Polycaprolactam and two fillers, kaolinite and glass fiber, were used in the experiment. The effect of the fillers on the morphological forms and mechanical properties of the polymers was studied with specimens which contained varying amounts of fillers. The specimens, 5--6 mm thick and 10 mm in diameter, were prepared as follows: 1) compression molding at 180°C and 1000 kg/cm<sup>2</sup>; 2) heating to 270°C followed by cooling at a rate of 2--3°C/min to 270--180°C; 3) heat treatment at this temperature for 1 hr; and 4) cooling to room temperature at the same rate. It was found that specimens prepared by mixing finely divided polycaprolactam molding powder with 5 to 20% kaolinite turned out to consist of alternating kaolinite and polycaprolactam spherulite layers, and to be very brittle. To improve the structure and the mechanical properties of the filled

Cord 1/4

UDC: 678.01:53



1 25116-66

ACC NR: AP6003420

polymer, it was found necessary to lower the filler content, and to improve the distribution of the filler while retaining its original finely divided state in the polymer. To this end the fillers were added to the polymer in the course of polymerization. Kaolinite or glass fiber (3 mm long) in the form of an aqueous suspension was added drop-wise to caprolactam polymerizing under an inert gas at 270° C, 35 min after the onset of the polymerization. As the drops hit the melt, they explode under the effect of the steam formed and cause the filler to distribute uniformly in the melt.

The effect of filler content and heat-treatment temperature on spherulite size in the improved polycaprolactam specimens was determined (See Fig. 1) using metallographic techniques. Micrographs of filled and nonfilled specimens heat-treated at 250° C showed that the filler concentrates in the boundaries and defect spots of spherulites.

The decrease in the spherulite size which occurs on addition of kaolinite (see Fig. 1) can be explained as follows: 1) kaolinite acts as a nucleating agent which accelerates crystallization, and 2) some of the filler is squeezed out into the less dense, amorphous interspherulite regions, concentrates within these regions, and hinders spherulite growth.

The effect of glass fiber on spherulite size requires further study, presently in progress.

Card 2/4

Z 26116-56

ACC NR: AP6003420

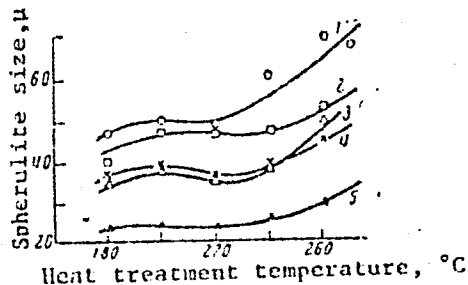


Fig. 1. Effect of heat treatment temperature on the size of spherulites of filled and non-filled polycaprolactam (PC)

1 - Nonfilled PC; 2 - PC, filled with 0.5% kaolinite; 3 - PC, filled with 5% kaolinite; 4 - PC, filled with 0.5% glass fiber; 5 - PC, filled with 5% glass fiber.

Structural changes in filled polycaprolactam were shown to correlate with changes in its mechanical properties, e. g., the highest bending strength was exhibited by specimens filled with 2% kaolinite. Improvement of the mechanical properties of polycaprolactam by fillers can be attributed to two factors: 1) decrease of the spherulite size, and 2) strengthening of the amorphous interspherulite regions.

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L 26116-66

ACC NR: AP6003420

This strengthening is very important in view of the established facts that polymers crystallize stepwise, and that the final steps, which involve slow crystallization of the amorphous regions, can last up to several years and cause changes in the properties of the polymer (aging). Concentration of filler particles in amorphous regions lowers molecular mobility, hinders molecular rearrangement to form the crystalline phase, and promotes stabilization of the original polymer structure.

Stabilization of the most favorable structures in the polymers could greatly contribute to an improvement of the mechanical properties of the end products. Preliminary studies by the authors of changes in the microstructure and crystallinity of filled and nonfilled polycaprolactam as a function of time suggested the feasibility of stabilizing the structures of crystalline polymers by means of fillers. Further studies along these lines are in progress. Orig. art. has: 2 figures. [FSB: v.2, no.3]

SUB CODE: 11, 20, 07 / SUBM DATE: 17Feb65 / ORIG REF: 009 / OTH REF: 005

Card 4/4 CC

L 47390-66 EWT(m)/EWP(j)/T IJP(c) RM  
ACC NR: AP6030744 (A,N)

SOURCE CODE: UR/0021/66/000/008/1031/1033

AUTHOR: Polyetukha, V. V. --Poletukha, V. V.; Solomko, V. P.; Vilens'ka, M. R. --Vilenskaya, M. R.; Uskov, I. O. --Uksov, I. A.; Yurzhenko, T. I.

ORG: Kiyev State University (Kiyivs'kiy derzhavniy universytet)

18

TITLE: Grafting of polymethyl methacrylate and polystyrene on kaolin modified by organic peroxide compounds

5 B

SOURCE: AN UkrRSR. Dopovidi, no. 8, 1966, 1031-1033

TOPIC TAGS: filler modification, vinyl monomer polymerization, polymethylmethacrylate, grafting

ABSTRACT: Fillers modified by compounds firmly bound to the filler's surface and capable of initiating the polymerization of vinyl monomers are investigated. For this purpose, kaolin was treated with organic peroxide compounds and then brought in contact with refined styrene and methyl methacrylate. Considerable quantities of unextracted polystyrene and very large amounts of poly(methyl methacrylate) were formed during polymerization. This is explained by the

Card 1/2

ns

Card 2/2

L 04981-67 EWT(m)/EWP(j)/T LJP(c) RM

ACC NR: AP6031518

SOURCE CODE: UR/0073/66/032/009/0979/0982

AUTHOR: Tarasenko, Yu. G.; Bondarenko, S. V.; Gordiyenko, S. A.;  
Uskov, I. A.; Solomko, V. P.; Vdovenko, N. V.; Ovcharenko, F. D.

29  
B

ORG: Kiev State University im. T. G. Shevchenko (Kiyevskiy gosudarstvennyy universitet); Institute of General and Inorganic Chemistry, AN UkrSSR (Institut obshchey i neorganicheskoy khimii AN UkrSSR)

TITLE: Hydrophobic fillers in amorphous polymers

SOURCE: Ukrainskiy khimicheskii zhurnal, v. 32, no. 9, 1966, 979-982

TOPIC TAGS: kaolinite, filler, modified kaolinite, polymethylmethacrylate, *kaolin, amorphous polymer*

ABSTRACT: Nonmodified kaolinite<sup>15</sup> is an active filler for poly(methyl methacrylate) [PMMA]. A study has been made of the effect of modified kaolinite on the properties of PMMA. Treatment of kaolinite with hydrolyzed polyacrylamide [HPAA] did not change the size of kaolinite particles and had no effect on their aggregation, but considerably affected the surface properties of the modified product. It was shown that introduction of small amounts of HPAA in the surface layer of the filler lowers its capacity to form hydrogen bonds with PMMA macromolecules, while large amounts of HPAA screen the OH surface groups of

Card 1/2

UDC: 678.046+541.183

ACC NR: AP7001488

SOURCE CODE: UR/0436/66/000/006/0017/0020

AUTHOR: Solomko, V. P.; Semko, L. S. (Candidate of chemical sciences)

ORG: Kiev State University (Kiyevskiy gosuniversitet)

TITLE: The effect of fiberglass on mechanical characteristics of polystyrene and polymethylmethacrylate in the vitreous state

SOURCE: Khimicheskaya promyshlennost' Ukrainy, no. 6, 1966, 17-20

TOPIC TAGS: reinforced plastic, polymethylmethacrylate, polystyrene, glass fiber, plastic film, plastic strength

ABSTRACT: Variations of tensile strength have been studied within the temperature range of the existence of the vitreous state in fiberglass-reinforced polystyrene (PS) and polymethylmethacrylate (PMMA) films with variable fiberglass content. The procedures of preparation and testing of the films were described by the authors in an earlier study [Khimicheskaya promyshlennost' Ukrainy, no. 5, 1966]. Inversion of the strengthening effect of fiberglass was observed within the existence range of the glassy state only above the brittle point of the plastic material. This inversion was reflected in the existence of the maximum effect at a certain fiberglass content and at a temperature above the brittle point and was explained by the existence of a critical elasticity of macromolecules. The strengthening effect of the fiberglass was shown to occur even in the brittle state above a certain fiberglass content.

Card 1/2

UDC: 678.7.004.12:677.521

ACC NR: AP7001488

Equal strengthening effect and/or equal tensile strength were observed in the samples of a given polymer with different content of reinforcing filler at a given temperature. Thus, physicommechanical characteristics of a reinforced polymer may be different in different subregions of the vitreous state. The same polymer, reinforced with different content of reinforcing filler, at a given temperature may exhibit equal strengthening effect (equally-reinforced samples) or equal strength (equally-resistant samples). Orig. art. has: 3 figures. [JK]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004/ ATD PRESS: 5110

Card 2/2

ACC NR: AT7006297

(N)

SOURCE CODE: UR/0000/66/000/000/0153/0162

AUTHOR: Solomko, V. P.; Zhigotskiy, A. G.; Uskov, I. A.

ORG: none

TITLE: Mechanical properties of polymer films filled with glass and viscose fiber

SOURCE: AN UkrSSR. Sintez i fiziko-khimiya polimerov (Synthesis and physical chemistry of polymers). Kiev, Naukova dumka, 1966, 153-162

TOPIC TAGS: glass fiber, viscose, polystyrene, polymethylmethacrylate, polyethylene, polyvinyl alcohol, polyvinyl acetate, polyvinyl butyral

ABSTRACT: The authors studied the dependence of the mechanical properties (breaking stresses  $\sigma_b$  and breaking elongations  $\epsilon_b$ ) of polystyrene, polymethyl methacrylate, polyethylene, polyvinyl alcohol, polyvinyl butyral and polyvinyl acetate on the concentration of viscose fiber, and the dependence of the same properties of polyvinyl alcohol, polyvinyl butyral and polyvinyl acetate on the concentration of glass fiber up to 20 wt. % inclusive at deformation rates of 0.3, 3 and 30 mm/min. Depending upon the nature of the polymer, the introduction of the fiber either increases or decreases  $\sigma_b$  as the filler concentration rises, while  $\epsilon_b$  declines. In all cases, films filled with glass fiber are characterized by a higher strength than films filled with viscose fiber. The nature of the dependence of  $\sigma_b$  on the fiber concentration is the same for both types of fibers. The mechanical properties of the

Card 1/2



ACC NR: AT7006297

filled polymer films are much more sensitive to changes in the deformation rate than those of unfilled films. As a rule, a decrease in the deformation rate in the range of rates studied leads to an increase of  $\sigma_b$  and decrease of  $\epsilon_b$  in unfilled polymer films. The data obtained are explained in terms of the relaxational character of the deformation of filled polymers, the kinetics of development of defects, and the reinforcing role of the three-dimensional structural network formed by the fiber in the polymer medium. Orig. art. has: 6 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 019

Card 2/2

ACC NR: AT6036922

SOURCE CODE: UR/3235/64/000/018/0169/0203

AUTHOR: Solonenko, V. P.

ORG: none

TITLE: Seismicity of southern Pribaykal'ye and the experience gained in seismic zoning of the alluvial fan on Lake Baykal

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut zemnoy kory. Trudy, no. 18, 1964. Voprosy seysmichnosti Sibiri (Problems in the seismicity of Siberia), 169-203

TOPIC TAGS: seismology, earthquake, seismic wave, seismicity, tectonics, seismic microregionalization, alluvial fan / *PRIBAIKAL, MONGOLIA*

ABSTRACT: The seismicity of southern Pribaykal'ye is reviewed on the basis of available macroseismic data. It is pointed out that more than 600 earthquakes, some with intensities as high as XI, were felt in this region during the last 250 years. The epicenters of all of the strongest and some of the relatively weaker shocks originate in the fault zones southeast of Lake Baykal. Paleoseismological

Card 1/2

UDC: 550.341.2+550.341.5

ACC NR: AT6036922

studies reveal an extensive development of faults in the area. A similarity is noted between the manifestation of recent tectonic forms in Pribaykal'ye and in Mongolia; however, it is believed that the two focal mechanisms are different. While thrust- and strike-slip faulting, the latter being predominant, are responsible for the earthquakes in Mongolia, strike-slip and dip-slip faulting, the latter predominating, are responsible for shocks in Pribaykal'ye. This explains the larger number of catastrophic earthquakes originating in Mongolia and the more frequent occurrence of weaker shocks in Pribaykal'ye. A large part of the paper deals with tectonics and seismic zoning. A seismic map of Southern Pribaykal'ye and a seismogeologic map of the southern part of Lake Baykal are among the 16 figures in the text. Orig. art. has: 16 figures and 2 tables.

[WA 79-67-4]  
[CS]

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 033

Card 2/2

ACC NR: AP7004064 (A) SOURCE CODE: UR/0190/67/009/001/0040/0044

AUTHOR: Solomko, V. P.; Molokoyedova, T. A.; Uskov, I. A.; Polichkovskaya, T. V.

ORG: Kiev State University im. T. G. Shevchenko (Kiyevskiy gosudarstvennyy universitet)

TITLE: Effect of nonmodified and modified fillers on the morphology and dimensions of spherulites, and mechanical properties of polycaproamide and polyethylene

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 9, no. 1, 1967, 40-44

TOPIC TAGS: filler, morphology, spherulite, mechanical property, film

ABSTRACT: An investigation has shown that modified and nonmodified fillers significantly affect the dimensions and morphology of spherulites in methyl-polysiloxane, modified and aminated aerosil, silica, kaoline and glass fiber. Surface modification of fillers induces a more pronounced interaction with a given polymer, as compared with nonmodified filler-polymer interaction. Addition of

Card 1/2

UDC: 678.01:53+678.678.675+678.742

ACC NR: AP7004064

optimum concentrations of fillers induces a number of changed in spherulites such as morphological and dimensional, while a concentration of fillers exceeding optimum levels does not have any significant effect. Mechanical properties of the filled films are determined by the size of spherulites only at very low filler concentrations, when the filler acts primarily as a nucleation center. In the case of increased filler concentrations, its effect on the mechanical properties of a film becomes predominant. Orig. art. has: 3 figures. [AM]

SUB CODE: 20/SUBM DATE: 26Oct65/ORIG REF: 005/

Card 2/2

1. SOLOMKO, V. S. DEHELYUK, S.P.
2. USSR (600)
3. Wood Pulp Industry
4. High-speed methods for producing pulp.  
Bum.prom.27(No. 6 - 1952.

9. Monthly List of Russian Acquisitions, Library of Congress, February, 1953. Unclassified.

1. DZHELYUK, S. P. , SOLOMKO, V.S.
2. USSR (600)
4. Wood Pulp
7. Results of producing sulfate pulp from larch. *Bum, Prom.* 27, No. 10, 1952.

9. Monthly List of Russian Accessions. Library of Congress , February 1953. Unclassified.

SOLOMKO, V.S., inzhener.

Rationalization of the power system of a pulp and paper combine. *Bum.prom.*  
22 no.9:22-27 S '53. *(MLRA 6:8)*

(Paper industry) (Wood-pulp industry)



SOLOMKO, V.S., glavnyy inzhener.

Manufacture of sulfate cellulose from Siberian cedar wood pulp. Bum.  
prom. 28 no.6:6-9 Je '53. (MLRA 6:6)

1. Solombal'skiy tsellyulozno-bumazhnyy kombinat. (Wood pulp) (Cedar)

SOLOMKO, V.S.; PODOL'SKIY, A.D., nachal'nik varochnogo tsakha.

Accelerated washing of sulfate cellulose in diffusors. Bum.prom. 29 no.4:  
15-17 Ap '54. (MLRA 7:6)

1. Glavnyy inzhener Solombal'skogo tsellyulosno-bumazhnogo kombinata  
(for Solomko). (Wood pulp) (Papermaking machinery)

SOLOMKO, V.S.

Improving the process of evaporating black lye. Bum.prom.  
30 no.4:14-20 Ap '55. (MLRA 8:6)

1. Direktor Solombal'ekogo tsellyulozno-bumazhnogo kombinata.  
(Lye)

SOLOMKO, V.S.

The use of wood sawing and lumbering wastes for the production of sulfate pulp. Bum.prom. 30 no.5:27-28 My '55. (MLRA 8:8)

1. Direktor Solombal'skogo tsellyulozno-bumashnogo kombinata  
(Wood waste) (Wood pulp)

SOLOMKO, V.S.

Improving the wood pulp and paper drying process. Bum.prom.30  
no.9:18-21 S'55. (MLRA 8:12)

1. Direktor Solombal'skogo tsellyulozno-bumashnogo kombinata  
(Paper industry)

SOLOMKO, V.S., inzhener.

Improving power utilization in the sulfate pulp industry. *Bum.prem.*31  
no.4:15-17 Ap '56. (MLRA 9:7)  
(Woodpulp industry)

SOLOMKO, V.S., inzhener.

New developments in the design, construction and modernization  
of papermaking machinery; Finland's experiences. Bum.prom. 32 no.2:  
25-28 P '57. (MLRA 10:5)  
(Finland--Papermaking machinery)

SOLOMKO, V.S., insh.

Production of parquet boards in Finland. Der. prom. 7 no.1:29 Ja '58.  
(Finland--Parquet floors) (MIRA 11:1)



SOLOMKO, V.S., inzh.

Winter storage of wood in water (experience of the woodpulp  
and paper industry of Finland). Bum. prom. 34 no.4:24-25

Ap '59.

(MIRA 12:7)

(Finland—Wood—Storage)

SOLOMKO, V.S., inzh.

Producing woodpulp from chips. Bum.prom. 34 no.7:22-24  
J1 '59. (MIRA 12:10)  
(Woodpulp)

SOLOMKO, V.S., inzh.

Main trends in the development of the Finnish woodpulp and paper industries. Bum. prom. 34 no.11:24-26 N '59. (MIRA 13:3)  
(Finland--Paper industry) (Finland--Woodpulp industry)

— SOLOMKO, V.S., inzh.

"Kaukopeia" sulfate pulp combine. Bum.prom. 35 no.5:27-31  
My '60. (MIRA 13:7)

(Finland--Woodpulp industry)

SOLOMKO, Vasilii Savvich

[Forests and forestry in Finland] Lesa i lesnoe kho-  
ziaistvo Finliandii. Moskva, Goslesbumizdat, 1962. 193 p.  
(MIRA 16:8)

(Finland—Forests and forestry)

SOLOMKO, Vasiliy-Savvich; VASENKO, A.V., retsenzent; SERDYUKOV,  
M.P., retsenzent; SIMAKOVA, A.N., red.; KHIVRICH, Ye.D.,  
red. izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Woodpulp and paper industry in Finland]TSelliulozno-bumazhnaia  
promyshlennost' Finliandii. Moskva, Goslesbumizdat, 1962. 538 p.  
(MIRA 15:12)

(Finland--Woodpulp industry) (Finland--Paper industry)

SOLOMKO, V.S.

Ways of increasing labor productivity in newly built enterprises.  
Bum. prom. 38 no.11:3-4 N '63. (MIRA 17:1)

1. Direktor Gosudarstvennogo instituta po proyektirovaniyu  
predpriyatiy tsellyuloznoy i bumazhnoy promyshlennosti.

YATSUK, M.A.; SOLOMKO, V.Ya.

Scale formation on tungsten under atmospheric high temperatures.  
Report No.1. Trudy IMA no.87:5-12 '59. (MIRA 13:4)  
(Tungsten--Corrosion)



S/081/62/000/004/039/087  
B156/B138

18. 1150.

AUTHORS: Yatsuk, M. A., Solomko, V. Ya.

TITLE: Scale formation at high temperatures in air on an iron alloy containing 5% of tungsten

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 317, abstract 4I224 (Nauchn. tr. Leningr. lesotekhn. akad., no. 92, part 3, 1961, 95 - 103)

TEXT: Study of the kinetics of oxidation of an Fe alloy containing 5% W in air at 800, 850, 900, 960 and 1000°C has shown that the oxidation follows a parabolic law. It was established that the scale consists of 3 layers: the first an outer layer of hematite, the second an inner layer of magnetite, and the third, next to the metal, of wustite with inclusions of  $WO_3$  and its salt  $FeWO_4$ . The alloy containing 5% W oxidizes faster than alloys with 10 and 14% W. The relative thickness of the layer of wustite in the scale next to the metal is greater, at 100°C, in the alloy containing 5% W. [Abstracter's note : Complete translation.]

Card 1/1

S/080/62/035/010/010/012  
D204/D307

**AUTHORS:** Yatsuk, I.M. and Solomko, V.Ya.

**TITLE:** The kinetics of the rate of oxidation of an iron alloy containing 9.77% tungsten, at 740 - 960°C

**LITERATURE ID:** Zhurnal prikladnoy khimii, v. 35, no. 10, 1962, 2336-2338

**TEXT:** The present work is part of a study of the behavior of Fe alloyed with various metals, particularly W, at elevated temperatures, in the presence of oxidizing atmospheres. The kinetics of the aerial oxidation of an alloy containing 9.77 W, 0.19 C, 0.34 Si, 0.026 N, 0.043 S, and 0.55% Mn were studied at 740, 830, 900 and 960°C, by a thermobalance method, over 20 - 126 hours. The specimens were in the form of 30.6 mm long cylinders, 8 mm in diameter. The (gain in weight per unit area) versus time plots showed that the weight increase was approximately linear at 740°C and approximately parabolic at and above 900°C, the velocity constants (with rising temperatures) being 0.12, 0.8, 3.4 and 14.0. Arrhenius'

Card 1/2

S/080/62/035/010/010/012  
D204/D307

The kinetics of the rate ...

equation was obeyed. An induction period of 5 - 20 hours was observed, during which the oxidation was slow. Microscopic, chemical and X-ray analyses showed that a three-layer scale formed on the specimens: an outermost thin layer of  $Fe_2O_3$ , followed by a thick skin of  $Fe_3O_4$ , followed by an innermost, heterogeneous coating of  $FeO$  containing  $WO_3$  or  $FeWO_4$ . There are 3 figures.

SUBMITTED: July 13, 1961

Card 2/2

USSR/Agriculture

FD-1572

Card 1/1 : Pub. 42-4/11

Author : Shkvarnikov, P. K. and Solomko, Ye. A.

Title : Use of chemical stimulants for arousing freshly gathered tubers of the potato plant from a dormant state

Periodical : Izv. AN SSSR. Ser. biol. 5, 55-65, Sep-Oct 1954

Abstract : Briefly reviews previous work in this field and gives account of investigation on the effectiveness of chemical stimulants, especially thiourea, in stimulating germination of freshly gathered tubers of the potato plant for the purpose of summer planting from these tubers. Chemicals tested were: carbon dioxide; hydrogen sulfide; potassium, sodium, and ammonium thiocyanates; thiourea, and ethylene chlorohydrin. Tests were conducted in 1951, 52, and 53. Graphs; photograph; table. Seven references, all USSR (all since 1953)

Institution : Crimean Affiliate, Academy of Sciences USSR, Simferopol'

Submitted : April 12, 1954

1965.

Artificial mutations of practical value in potatoes. *Genetika*  
no.1:179-184. '65. (MIR 18:10)

7. Institut tsibolepii i genetiki sibirskoi stepeniava AN SSSR,  
Nov. Sibsk.

SOLOMKO, Ye.A.

Potato mutations induced by the action of ionizing radiation  
on vegetative plant parts. Radiobiologiya 5 no.4:547-554 '65.

(MIRA 18:9)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR,  
Novosibirsk.

STANLEY, H. H.

Tobacco Manufacture and Trade

Unrealized possibilities in tobacco factories. Tatak 13 no. 2, 1952.

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

SJLOMKO, YE. D.

Tobacco Industry

Year-round work plan for tobacco factories. Tabak 13, No. 4, 1952

Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.



1. SOLOMKO, <sup>Ye. D.</sup> ~~SI~~.
2. USSR (600)
4. Cigarette Industry
7. Introducing a fragility index into the standard for mouthpiece paper. Tabak  
13 No. 6. 1952

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

SOLOMKO, P. L. F.

Determination of thiophene in commercial benzene. Z. P. Solomko. Nauch. Zapiski Dnepropetrovsk. Gosudarst. Univ. 43, 38-44(1953); Referat. Zhur., Khim. 1954, No. 16834.—Thiophene (0.0005-0.01%) was detd. photocolormetrically from its reaction with isatin in the presence of  $Fe_2(SO_4)_3$ . The reagent (0.01 g. isatin and 0.01 g.  $Fe_2(SO_4)_3$  in 100 ml. of concd.  $H_2SO_4$ ) is stabilized by heating on a water bath for 15-20 min. Light adsorption becomes const. after 6-8 min. following the shaking for 1 min. of 3 ml. of reagent with the soln. analyzed. The color is stable at 20-35°. The presence of 0.5%  $CS_2$  does not interfere.

M. Hoesch

SOLOMKO, Z. F.

USSR.

✓ 683. The determination of carbon disulphide in commercial and crude benzene. F. I. Berezovskaya and Z. F. Solomko (*Nauch. Zap. Dnepropetrovskogo Gos. Univ.*, 1984, 43, 31-36; *Referativnyi Zh. Khim.*, 1984, Abstr. No. 16,820).—Carbon disulphide

is converted to the ethylxanthate, and the red-violet colour of the Mo complex, which the compound forms in acid medium, is measured colorimetrically. *Procedure*—Stir 2-5 ml of the benzene for 5 min. with 15 ml of ethanolic alkali, distil off the benzene and ethanol, and dilute the residue to 250 ml with water. To 0-5 ml of this soln., add 1-5 ml of 15 per cent. ammonium molybdate, 1-5 ml of 10 per cent. HCl and water to 10 ml, mix and determine the intensity of colour in a photocolourimeter. Read the C<sub>2</sub>S content from a calibration curve. The sensitivity limit is 0.001 mg per ml.

K. HAYES

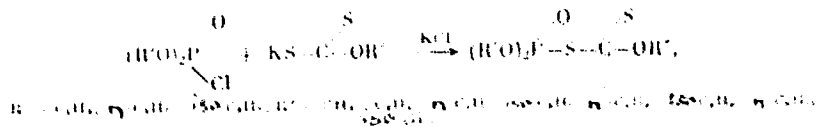
30771-30-2-3/70

AUTHORS: Malinovsky, M. S., Solonko, Z. P.

TITLE: The Synthesis and Properties of Dialkylphosphoryl Alkyl Xanthogenates

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, No 2, pp 652-653 (USSR)

ABSTRACT: The reaction of alkyl xanthogenates of potassium with dialkyl chlorophosphates in absolute ether gave, after filtration and vacuum distillation, 19 new compounds, according to the equation:



The compounds were obtained in quantities of 10-15% yield. They readily crystallize from ether solutions and are soluble in ether, benzene, and chloroform. Their physical and chemical properties are given in the table.

Preparation and Properties of Dialkyl-  
phosphoryl Xanthogenates

1966  
SOV 70-3040-1000

constants are shown in Table A. There  
is 1 table; and 2 references. 1 U.S., 1 Soviet. The  
U.S. reference is: U.S. Pat. 3,211,111 (1966).

ASSOCIATION: Dnepropetrovsk State University (Dnepropetrovskiy  
gosudarstvennyy universitet)

SUBMITTED: April 28, 1966

caption to Table A. Dialkyl phosphoryl xanthogenates  
Key to Table A. (1) Compound No; (2) Phosphorus content  
(in %); (3) calculated; (4) found; (5) calculated;  
(6) found; (7) Yield (in %).

Card 2/3

MALINOVSKIY, M.S.; SOLOMKO, Z.F.; YEVTUSHENKO, Ye.I.

Interaction between  $\beta$ -chloroethylchlorosulfonate and esters of  
phosphorus acids. Zhur.ob.khim. 30 no.8:2591-2593 Ag '60.  
(MIRA 13:8)

1. Dnepropetrovskiy gosudarstvennyy universitet.  
(Phosphorus acids) (Sulfonic acids)

MALINOVSKIY, M.S.; SOLOMKO, Z.F.; YURILINA, L.M.

Reactions of dialkylaminoethanols with esters of phosphoric and  
thiophosphoric acids. Zhur.ob.khim. 30 no.10:3454-3456 0 '61.  
(MIRA 14:4)

1. Dnepropetrovskiy gosudarstvennyy universitet.  
(Anthraquinonesulfonic acid) (Chloric acid) (Chloration)

MALINOVSKIY, M.S.; SOLOMKO, Z.F.; GLUSHKO, L.P.

Sulfanilides. N-sulfonyl derivatives of thiourea.  
Ukr.khim.zhur. 28 no.8:952-954 '62. (MIRA 15:11)

1. Dnepropetrovskiy gosudarstvennyy universitet.  
(Urea)  
(Sulfonyl group)



MALINOVSKIY, M.S.; SOLOMKO, Z.F.; TESLENKO, Ye.P.; YEFREMOVA, A.L.

Sulfanilides. Part 1: N-sulfonyl-arylglycine-dialkylamide.  
Zhur.ob.khim. 32 no.3:726-728 Mr '62. (MIRA 15:3)

1. Dnepropetrovskiy gosudarstvennyy universitet.  
(Sulfanilide)

MALINOVSKIY, M.S.; SOLOMKO, Z.F.; GLUSHKO, L.P.

Sulfanilides. Part 2: N-sulfanyl derivatives of thiourea.  
Zhur.ob.khim. 32 no.3:728-731 Mr '62. (MIRA 15:3)

1. Dnepropetrovskiy gosudarstvennyy universitet.  
(Urea) (Sulfanilide)

MALINOVSKIY, M.S.; SOLOMKO, Z.F.; GLUSHKO, L.P.

Sulfanilides. Part 5: N-chloroacetyl derivatives of  
sulfanilides. Zhur.ob.khim. 32 no.10:3195-3197 0 '62.  
(MIRA 15:11)

1. Dnepropetrovskiy gosudarstvennyy universitet.  
(Sulfanilide)

TESLENKO, Ye.P.; SOLOMKO, Z.F.; MALINOVSKIY, M.S.

Sulfanilides. Part 9: Dimethylamides of N-arylsulfonyl-N-arylglycine.  
Ukr.khim.zhur. 29 no.5:519-521 '63. (MIRA 16:9)

1. Dnepropetrovskiy gosudarstvennyy universitet.