

SHCHEGOLEVA, V.P., zasluzhennyy vrach BSSR; GAYDAMAKINA, L.G.

Embolism of the pulmonary artery. Zdrav. Belor. 5 no.2:57-58 F '59.
(MIRA 12:7)

1. Iz Baranovichskogo gorodskogo roditel'nogo doma.
(EMBOLISM) (PULMONARY ARTERY--DISEASES)

3(7) **PHASE I BOOK EXPLOITATION** 307/2113
Tsentrallyy Institut prognozov

Voprosy sovmestikh gidrometeorologicheskikh prognozov (Problems of Marine Hydrometeorological Forecasting) Moscow, gidrometeorologicheskoye izdatel'stvo, 1973. 88 p. Mirraata aliip inserted. (Series: Ita; Tsenty, 777. 76) 1,000 copies printed.

Sponsoring Agency: USSR. Glavnoye upravleniye gidrometeorologicheskoye sluzhby.

Ed. (Title Page): N.A. Belinskiy; Ed. (Inside book): M.M. Goryushkin; Trans. Ed.: I.M. Zarub.

PURPOSE: This issue of the Institute's Transactions is intended for hydrometeorologists and advanced students in the field.

COVERAGE: This collection of articles deals with the problem of forecasting the onset of seasonal ice phenomena. Individual papers treat conditions in the Japanese, Bering, White, and Caspian Seas, the Drina, Bug, and Dnepr Rivers. No personalities are mentioned. References accompany each article.

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SHCHEGOLEVA, Z.A.

The new K-214-43 pressed material for the high-voltage parts of ignition devices. Avt.prom. 27 no.8:33-34 Ag '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy eksperimental'nyy institut avtotraktornogo elektrooborudovaniya i priborov.
(Plastics)

SOYFER, I.M.; SHCHEGOLEVA, Z.A.

Studying the background in single crystals of antimony.

Fiz. met. i metalloved. 19 no.4:637-640 Ap '65.

(MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov.

L 40315-66 1(1)/EHP(m)/T-3 IJF(c) UN

ACC NR: AR6019471 SOURCE CODE: UR/0269/66/000/002/0020/0020

AUTHOR: Shchegoleva-Svechnikova, G. P.

60
B

TITLE: Possibility of magnetohydrodynamic experimentation in astrophysics

SOURCE: Ref. zh. Astronomiya, Abs. 2.51.174

REF SOURCE: Izv. Gl. astron. observ. v Pulkove, v. 24, no. 2, 1965, 145-161

TOPIC TAGS: astrophysics, magnetohydrodynamics, electroconductive fluid

ABSTRACT: The paper gives a review of experimental studies carried out with electroconductive fluids, applicable to astrophysics. The conclusion has been reached that the difference between the physical conditions in a laboratory and those in space greatly reduce the applicability of experimental results to space objects. Bibliography of 53 titles. [Translation of abstract] [KP]

SUB CODE: 20, 03/ SUBM DATE: none

Card 1/1/1/21

UDC: 523

L 33519-65 ENG(j)/EWT(1)/EWT(m)/EPF(c)/EPR/EWA(d)/EWP(t)/EWP(b) Fr-4/Ps-4
IJP(c) EJM/JD

ACCESSION NR: AR5005693

S/0276/64/000/009/V039/V040

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Svodnyy tom, Abs. 9V254

AUTHOR: Bogdanov, Ye. S.; Yanskiy, S.N.; Penkov, V.M.; Shchegolevatykh, V.D.

TITLE: Analysis of the effects of processing factors on the strength of seams produced while extruding aluminum

CITED SOURCE: Tr. Kuybyshevsk. aviats. in-t., vyp. 17, 1963, 27-37

TOPIC TAGS: aluminum extrusion, clinched seam, buttless extrusion, extrusion pressure, extrusion temperature, contact surface, deformation level, sampling technique, container pocket volume/ A-1 aluminum

TRANSLATION: The article describes the results of a qualitative analysis of seams (i. e., longitudinal seams while extruding hollow profiles and transverse seams between billets in buttless extrusion) obtained while extruding A-1 aluminum, in relation to deformation level, temperature, pressure, and type and degree of surface contamination. A procedure was evolved for obtaining samples with seams which allow one to carry out a large number of mechanical tests on such samples. Billet splits of defined length,

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insuring a given level of deformation, were inserted into sleeves, covered by back-up plates and placed in a container, so that their free ends protruded from the sleeves and abutted in the center of the container. The entire jig was heated in a shaft furnace to an assigned temperature, the sleeves were then drawn together on a tester, clinching the free ends of the splits. The sleeves were withdrawn after the operation was concluded and the seam sample was removed. In studying effects of deformation level on quality of the seam, the free-space pocket volume between sleeves and container walls was selected in such a manner that it did not become entirely filled. In analyzing the effects of pressure, the selection of pocket volume and length of free ends of the splits were calculated to produce total filling of the entire pocket volume. Pressure in the container depended, in this case, on the force generated by the tester. Samples for mechanical tests were made from the seamed pieces. Temperature and level of deformation are the principal factors affecting quality of the seam. Seams with strength characteristics entirely equal to the basic metal form in A-1 aluminum at 350C and deformation levels of 23 or greater, or at 400-450C and deformation levels of 20 or greater. An increase in pressure from 10 to 74 kg/mm² exerted no significant effects on seam quality within the accepted extrusion temperature range of 350-450C, since there was no apparent restoration of the contact surface. Values for σ_b decrease

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to 1/2, those for δ to 1/20th, when the faces of a split are contaminated by a thin layer of graphite dust. Hence, freedom from even insignificant contamination of contact surfaces of a split comprises a basic condition for obtaining quality seams in buttless extrusion. Bibl. with 3 titles; 6 illustrations.

SUB CODE: MM, IE

ENCL: 00

Card 3/3

L 33521-65 EWT(d)/EWT(1)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/
EWP(b)/EWP(1) Pf-4 MJW/JD

ACCESSION NR: AR5005694

S/0276/64/000/009/V040/V040

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Svodnyy tom, Abs. 9V255

AUTHOR: Bogdanov, Ye. S.; Yanskiy, S.N.; Penkov, V.M.; Shchegolevatykh, V.D.

TITLE: Effect of processing factors on the mechanical properties of the seam in tongue-and-groove die extrusion of D-1 alloy

CITED SOURCE: Tr. Kuybyshevsk. aviats. in-t, vyp. 17, 1963, 39-49

TOPIC TAGS: hollow profile extrusion, tongue-and-groove die, weld seam strength, basic metal strength, deformation level, extrusion pressure, extrusion temperature, extrusion rate, critical reduction level/D-1 alloy

TRANSLATION: The authors describe the results of a study on the effects of extrusion pressure, rate, temperature, heat treatment and level of deformation on mechanical properties of a seam in tongue-and-groove die extrusion of hollow profiles from D-1 alloy. The work was carried out on a 2000-ton press, extruding from a container with $\phi=170$ mm and from strips measuring $100 \times 7, 10, 11.5, 13$ or 15 mm. The width of the die's contact element was varied from 2 to 20 mm, hence allowing a variation of pressure level in the deformation area. Samples used in tensile tests of weld seams and of the entire metal were prepared from pieces cut out of the center and ends of a

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strip. The strength of a seam increased somewhat as pressure increased. At the same time, the strength of the entire metal increased as well. An increase in the extrusion rate from 0.75 to 3 cm/min. improved the strength of the seam and the metal by 10 to 12%. A rise in extrusion temperature also improved the strength of seam and metal. Heat treating, i. e., hardening followed by aging, improved σ_b of the seam and entire metal, decreasing at the same time the gap between the two values. The reduction level is a basic factor influencing the formation of a seam at a given temperature. The minimal reduction (critical reduction) for alloy D-1 equalled 20 at an extrusion temperature of 430C. A seam does not form at reduction levels below critical value, while its strength at levels above critical averaged 4% below that of the basic metal. Ten illustrations.

V. Volkovitskiy

SUB CODE: IE

ENCL: 00

Card 2/2

SHCHEGOLEVSKAYA, N. A.

25 4112

USSR/Engineering - Structural Analysis, Modeling

Aug 52

"Material for Models in the 'Freezing' Method,"
N. I. Prigorovskiy, A. K. Freyss, B. N. Rutovskiy,
N. A. Shchegolevskaya

Iz Ak Nauk SSSR, OTN, No 3, pp 1189-1192

Describes new optical material, MIKHM-IMASH, developed jointly by Inst of Machine Sci and Moscow Inst of Chem Machine Building, for models used in studying stress distribution with aid of polarized light. Material is based on triple copolymers which contain, together with poly esters of bivalent alcohols and dibasic acids, styrol and methyl methacrylate or allyl ethers capable of being polymerized. Outlines advantages of using new material, such as absence of boundary effect, possibility of making blocks entirely uniform in their optical-mechanical properties, possibility of making models of intricate shape etc. Presented by Acad I. I. Artobolevskiy 11 Dec 51.

CHROMOSOMES, V. A.

"New Materials for Models in the Polarization-Optical Method of Investigating Stress Distribution." *Jand Tech Sci*, Moscow Inst of Chemical Machine Building, Min Higher Education USSR, Moscow, 1955. (KL, No 16, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

ШЕЧЕГОЛЕВСКАЯ, N. A.

9349

NEW MATERIAL "GLIFTAMAL" FOR TESTING STRESS OF
FLAT MODELS BY USING POLARIZATION-OPTICAL
METHOD

M. F. Boksheln, N. I. Prigorovskii, S. I. Sokolov, and N. A. Shechegolevskaya. Izvest. Akad. Nauk S.S.S.R. Otdel. Tekh. Nauk No. 2, 139-41(1958) Feb. (In Russian)

A new type material "gliftamal" was developed for testing flat models at room temperature with reduced polymerization. "Gliftamal" is the product of pentaerythrite, glycerin, and diethylene glycol condensation with maleic and phthalic anhydrides. The material has a solidification time of 2 months. Disk-shaped samples were tested in polariscopes under diameter compression. The relations of m layers to the stresses and to the length of time under stress were determined. Selected samples showed optic proportionality of 30 bands calculated for 7 mm thickness. Tabular results are given. (R.V.J.)

SHCHEGOLEVSKAYA, N.A., kand. tekhn. nauk; SOKOLOV, S.I., doktor tekhn. nauk, prof.; KHESIN, G.L., inzh.; PRIGOROVSKIY, N.I., doktor tekhn.nauk, prof.

Optically active materials with various elastic moduli used in investigating stresses by polarization-optical methods. Izv. vys. ucheb. zav.; mashinostr. no.3/4:72-83 '58. (MIRA 12:5)

1. Moskovskiy institut khimicheskogo mashinostroyeniya (for Sokolov).
 2. Moskovskiy ordena Trudovogo Znameni inzhenerno-stroitel'nyy institut im. V.V. Kuybysheva (for Khesin).
 3. Institut mashinovedeniya AN SSSR (for Prigorovskiy).
- (Resins, Synthetic) (Strains and stresses)

AUTHORS: Shchegolevskaya, N.A., Sokolov, S.I. 32-24-4-66/67
~~XXXXXXXXXXXXXXXXXXXX~~

TITLE: An Optical Active Material "Epoksiftamal" (Opticheski aktivnyy material "Epoksiftamal")

PERIODICAL: Zavodskaya Laboratoriya. 1958, Vol. 24, Nr 4, pp. 511-511 (USSR)

ABSTRACT: The method of producing an optically active artificial resin is described which, according to TsNIITMASH at 20° possesses a longitudinal elasticity modulus of 35000-40000 kg/cm² and an optical layer thickness constant of 10 mm - 11 kg/cm; at 120° these values are 150 kg/cm² and 0.2 kg/cm respectively; at 120° C. the Poisson ratio is 0.5 with a low boundary effect. From the technique of production it follows that as initial product epoxy resin E -40 or ED -6 is used. The former is obtained from epichlorhydrin and phenylolpropane and contains 14-20% epoxy groups, 8% of which are volatile; their saponification number is 10 and their molecular weight 600-700 (without chlorine). The resin E -40 is hardened by means of a mixture of maleic- and phthalic anhydride and a technique is applied which makes it possible to obtain larger, homogeneous, and faultless specimens.

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An Optical Active Material "Epoksiftanal"

32-24-4-66/67

From the technique of working mentioned it may be seen that a thermopolymerization of longer duration is carried out. Instead of one part maleic anhydride phthalic anhydride may be used but this is, however, not possible in the case of ED-5 resin.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute for Chemical Machine Construction)

1. Plastics--Optical properties
2. Plastics--Production
3. Plastics--Properties
4. Phthalic anhydride--Performance

Card 2/2

5(1,3)

AUTHORS:

Shchegolevskaya, N. A., Netrebko, V. P., SOV/153-2-2-26/31
Skoryy, I. A., Sokolov, S. I.

TITLE:

Polymer Materials for Models of the Polarization-optical
Method of Examination of the Tension (Polimernyye materialy
dlya modeley polyarizatsionno-opticheskogo metoda issledova-
niya napryazheniy)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimiches-
kaya tekhnologiya, 1959, Vol 2, Nr 2, pp 280-286 (USSR)

ABSTRACT:

The demands made on the method mentioned in the title with
regard to the materials used, have considerably increased
because the tasks became more complicated and manifold. The
present paper continues the authors' previous investigations
in this direction. It concerns the examination-method
mentioned in the title, of tensions on the basis of products
of combined condensation and polymerization (Refs 2-4).
The authors further developed the previously prepared ways
of the variation of the structure and properties of materials
and investigated some more possible and at present topical
ways, in order to obtain materials with various properties.
The optically-sensitive materials looked for, are based

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Polymer Materials for Models of the Polarization-
optical Method of Examination of the Tension

SOV/153-2-2-26/31

upon products of common polymerization of unsaturated polyesters and monomers. Apart from diethylene glycol, sebacine, and maleic acid, phthalic anhydride, as well as terephthalic acid, tung-oil, linseed-oil, castor-oil, and caprolactam were used as initial chemical agents for the manufacture of polyester. Besides styrene and methylmethacrylate, acrylonitril also served as monomer. After an introduction, the experimental part is subdivided into the following chapters:

- a) Examination of the influence of a partial replacement of the sebacine-acid in the polyesters by phthalic anhydride, terephthalic acid, and terephthalic-dimethylester;
- b) Examination of the influence of a partial replacement of the sebacine-acid in the polyesters by castor-, tung-, and linseed-oil (Fig 3), as well as by a mixture of these oils;
- c) Examination of the influence of an addition of caprolactam;
- d) Examination of the influence of the replacement of part of the methyl-methacrylate and styrene by acrylonitril.

On the basis of the obtained results, the authors arrive at the following conclusions: 1) The task of producing optically-sensitive materials according to the

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optical Method of Examination of the Tension

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"freezing"-method (metod zamorazhivaniya) on a polyester basis, which are analogous to the material "MIKhM-ImaSh", which however are distinguished by their optical-mechanical characteristics, was solved by varying the combination of the initial components, and the method of condensation- and polymerization-reaction, respectively. 2) Among a number of test samples, stiffer materials with an increased modulus of elasticity compared with "MIKhM-ImaSh", and less stiff-ones (with decreased modular values) up to materials with signs of liquid state were produced. 3) The following can be used as structure-forming factors: a) increase of phthalic acid contents in polyesters and b) increase of the content of polyesters in the mixture with monomers (styrene and methyl-methacrylate). The introduction of the two mentioned factors is specially effective for the modular increase. The optical sensitivity can be increased by raising the styrene contents in the monomer - mixture. 4) The mentioned vegetable oils were used with positive results as fluxing agents which come into reaction with other components, (effect of the "inner plastification").

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optical Method of Examination of the Tension

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5) Caprolactam and acrylo-nitryl strongly accelerate the reaction of the common polymerization in the presence of benzoyl-peroxyde. The polymerization-process must, therefore, be carried out at a lower initial temperature.

6) The introduction of acrylo-nitryl at the expense of other monomers reduces the optical sensitivity of the finished product with a simultaneous increase of the elasticity-modulus. There are 4 figures, 1 table, and 4 Soviet references.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya i Moskovskiy gosudarstvennyy universitet imeni N. V. Lomonosova; Kafedra fizicheskoy khimii i kafedra teorii uprugosti (Moscow Institute of Chemical Engineering and Moscow State University imeni M. V. Lomonosov; Chair of Physical-chemistry and Chair of ~~The Theory of Elasticity~~)

SUBMITTED: May 6, 1958

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5(3), 15(8)
AUTHORS:

Shchegolevskaya, N. A., Sokolov, S.I. SOV/156-59-2-34/48

TITLE:

Some Peculiarities Concerning the Kinetics of the Process of Copolymerisation of Unsaturated Polyesters and Vinylmonomers Under Formation of a Three-dimensional Structure (Nekotoryye osobennosti kinetiki protsessa sopolimerizatsii nepredel'nykh poliefirov i vinil'nykh monomerov s obrazovaniyem prostranstvennoy struktury)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 350-353 (USSR)

ABSTRACT:

The reaction mentioned in the title has been investigated on diethyleneglycolpolyesters of the sebacin- and malein-acids and a mixture of styrene and methylmetacrylate. The dilatometric investigation showed that the reaction develops in an S shaped curve. The polymerisation process shows several phases. The first phase (smoothly rising curve) can be understood as induction period. The concentration of the free radical is increasing. During the second stage, the curve takes a linear course - the concentration of the free radical remains constant. The reaction develops in an equilibrium state. From the inclination of the straight portion, the activation energy is

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Some Peculiarities Concerning the Kinetics of the Process of Copolymerisation of Unsaturated Polyesters and Vinylmonomers Under Formation of a Three-dimensional Structure

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computed as 16,000 cal/mol. During the last phase the curve flattens out to an abscissa. A contraction of the volume occurs, the process slows down, not only through the consumption of the double compounds, but also through high viscosity and gel formation. There are 1 figure and 3 references, 1 of which is Soviet and 1 Hungarian.

PRESENTED BY: Kafedra fizicheskoy khimii Moskovskogo instituta khimicheskogo mashinostroyeniya (Chair for Physical Chemistry Moscow Institute of Machine Building for the Chemical Industry)

SUBMITTED: November 5, 1958

Card 2/2

Leningrad, University

PAGE 1 BOOK EXTRACTOR 807/NO12

Polytristation-optically active isodromalyn narytrubny; trudy konferentsii 13-21 fevralya 1968 goda (Optical Polarization Method for Stress Analysis: Transactions of the Conference of February 13-21, 1968). (Leningrad) Leningradskiy Universitet, 1968. 451 p. Karta slajd izmereni. 2,400 copies printed.

Bezp. Kk.1. S.P. Galibolov; Kk.1. Te.Y. Shchepetov; Tech. Kk.1. S.D. Yodolajinski; National Board S.O. Orskov; Lk.K. Koshov; V.M. Esakov; T.D. Makarov; V.I. Prigorovskiy; V.A. Frolov; S.L. Kozlov; S.M. Fr.; E.K. Edalibev.

REMARKS: This collection of 58 articles is intended for scientists and engineers concerned with experimental stress analysis of machine parts and structural components.

CONTENTS: The collection contains reports presented at the conference on optical polarization method in stress analysis held February 13 - 21, 1968, in Leningrad and attended by 328 delegates including representatives from the People's Republic of China, the Polish People's Republic, the Democratic People's Republic and the Republic of Czechoslovakia. The report covers general theoretical

problems and new methods of investigation and descriptive apparatus and materials used in the optical method. Reports on specific two-dimensional and three-dimensional problems occurred in the fields of aircraft design, marine construction, problems of heavy and precision machine design, in mining, geology, hydroelectric structures, railroad transport, in structural mechanics, problems in the control of stresses in products of the glass and electronic industry, etc., are given. Solution of the three-dimensional problem by means of the method of photoelasticity is introduced and the use of this method for the solution of problems associated with plasticity, creep, dynamics, hydrodynamics, etc., is demonstrated. Reports previously published elsewhere are printed here in abbreviated form. No personal files are mentioned. References are found at the end of 47 of the reports.

5. Jopelity, Jan (Czechoslovakia). Investigations with Optical Polarization Method at the Czechoslovak Academy of Sciences 14

II. PROBLEMS IN STRESS BY INSTRUMENTATION TECHNIQUES FOR THREE-DIMENSIONAL AND TWO-DIMENSIONAL PROBLEMS

6. Galibolov, S.P. Some Problems in the Investigation of the Three-Dimensional Problems by the Optical Polarization Method 37

7. Orskov, S.O., and O.T. Bendtsen. Determination of Calculated Stress According to Theory of Strength in Three-Dimensional Photoelastic Models 65

8. Esakov, V.M. On Transverse Radiosity in Photoelasticity 72

9. Frolov, V.A. On the Solution of a Three-Dimensional Problem by the Optical Method 82

10. Orskov, S.O. (Czechoslovakia). Use of a Set Method for Determining the Signs of Normal Stresses in the Two-Dimensional Problem of Photoelasticity 145

11. Kozlov, S.L. On the Experimental Machine-Loading Method 149

III. OPTIMIZED ACTIVE MATERIALS

12. Makarov, T.D. Optimally Active Materials Used in Laboratory Practice 151

13. Koshov, L.K., and S.L. Shchepetov. Use of Grate Polymers and Porous Beams for the Synthesis of Optically Active Materials 161

14. Koshov, L.K. (Czechoslovakia). A Few Conclusions on Photoelastic Material "Kritikopol" 170

IV. INSTRUMENTS FOR OPTICAL-POLARIZATION INVESTIGATIONS

15. Edalibev, E.K. Instruments of the Scientific Research Institute for Metallography and Mechanics of the Leningrad State University for Stress Analysis by the Optical Polarization Method 174

53230

1960

AUTHORS:

Shchegolevskaya, N. A., Osokina, D. N.,
Gzovskiy, M. V., Sokolov, S. I.

S/153/60/003/01/047/058
B011/B005

TITLE:

Polymeric Materials With Different Physicomechanical Characteristics
for Stress Investigations by the Optical Method

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
tekhnologiya, 1960, Vol 3, Nr 1, pp 172-175 (USSR)

TEXT: The authors proved the possibility of producing photoelastic substances with high optical activity and a wide range of elasticity moduli (up to gel-like substances of the gelatin-jelly type). These substances are produced on the basis of copolymers of unsaturated polyesters, of styrene, and of glyphthal and epoxide resins. These materials had manifold, given physicomechanical properties. The

authors paid special attention to the production of plastics with a viscosity (η) of $10^4 - 10^7$ poise, an elasticity modulus $E = 10^{-1} - 10^1$ kg/cm², and a high optical activity. Products of copolymerization of unsaturated esters and vinyl monomers have a reticular structure. Products with different optical and mechanical properties can be obtained by changing the number of chemical bonds between the molecules. For this purpose, saturated dicarboxylic acids (e.g. sebacic acid) are introduced besides unsaturated maleic acid, and the number of individual monomers (e.g. styrene) is varied. In contrast to previous papers, the authors investigated polyesters obtained with the use of reduced amounts of maleic acid

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Polymeric Materials With Different Physicomechanical Characteristics for Stress Investigations by the Optical Method

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and an excess of diethylene glycol (according to Ref 3). It was proven that the maximum amount of sebacic acid must not exceed that of maleic acid (1:1), or the product would become opaque. Benzoyl peroxide (0.1 - 1%) was added to the mixture. Polymerization was carried out at 20-40°. The polyester - styrene ratio was varied between 2:1 and 500:1. Optically active substances with

$E = 0.2 - 20 \text{ kg/cm}^2$ and a coefficient of optical activity $B_{\sigma} = 100-1000$ brewster ($10^{-13} \text{ cm}^2/\text{dyn}$) were obtained with styrene at a ratio of sebacic and maleic acid in polyesters of 2:1, and acid : diethylene-glycol of 2:3. Even at a polyester - styrene ratio of 1:500, they remained gelatinous. The figure (p 174) shows that both the modulus E and the optical activity of the polymer considerably increase with increasing styrene content. Modified glyphthal resins are condensation products of polyatomic alcohols (pentaerythrite, glycerin, diethylene glycol) with phthalic and maleic acid (Ref 4). They are called "gliftamal". They are suited for work at room temperature, having $E = 50,000 \text{ kg/cm}^2$ and $B_{\sigma} = 36$ brewster. Very transparent substances with $\eta = 10^4 - 10^7$ poise, and $B_{\sigma} = 2 \cdot 10^3$ brewster can be

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Polymeric Materials With Different Physicomechanical Characteristics for Stress Investigations by the Optical Method

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obtained by changing the acid - alcohol ratio, adjusting the thermal treatment, and using plasticizers. Previously (Ref 5) the author had produced an optically active, solid, elastic material "epoksiftamal" from the epoxide resin E-40. In the present paper, the amount of hardening agent was reduced to 3-5%. The resin became jellylike but remained brittle. At a content of 2-5% of maleic anhydride and 30% of dibutyl phthalate, an optically active, highly viscous liquid without a noticeable yield point was formed. At 5-22% of dibutyl phthalate, the resin has the maximum shearing stress. By combination of epoxide resin with hardening agent and plasticizer, it is possible to produce optically active substances with manifold physicomechanical properties: from elastic bodies to viscous liquids. There are 1 figure and 5 Soviet references.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya; Kafedra fizicheskoy khimii
(Moscow Institute for the Construction of Chemical Machines;
Chair of Physical Chemistry)

Card 3/4

Polymeric Materials With Different Physicomechanical
Characteristics for Stress Investigations by the
Optical Method

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S/153/60/003/01/047/058
B011/B005 ✓

SUBMITTED: April 10, 1959

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S/032/60/026/009/014/018
B015/B058

AUTHORS: Shchegolevskaya, N. A.; Morozov, B. A.; Skoryy, I. A.;
Kopytov, V. D.; Sokolov, S. I.

TITLE: The Use of Epoxy Resin of the Type Epoxy-CHS-2200 for
the Polarization-optical Method

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 9, p. 1149

TEXT: An optically active synthetic resin was obtained by using the Czechoslovakian epoxy resin of the type Epoxy-CHS-2200 with phthalic anhydride as hardener. The resin mentioned differs from the much used epoxy resins of the type Э40 (E40) and ЭА6 (ED6) by having a lower viscosity, and a homogeneous mass being nevertheless obtained with phthalic anhydride. The molten anhydride (40 g) is added to the epoxy resin (100 g) heated to 120°C, the mass is carefully mixed, poured into pre-heated molds, and left in the thermostat for 24 hrs at 100°C and then for 21 hrs at 120°C. The properties of the resin are tabulated. There are 1 table and 1 Soviet reference. ✓

Card 1/2

SHCHEGOLEVSKAYA, N.A.; SOKOLOV, S.I.

Materials for models used in the polarization-optical method
for the measurement of stresses. Plast.massy no.8:30-34 '61.

(MIRA 14:7)

(Plastics--Optical properties)

12:68

S/153/62/005/004/006/006
E075/E436

107100

AUTHORS: Shchegolevskaya, N.A., Sokolov, S.I., Polukhin, P.I.,
Vorontsov, V.K.

TITLE: On the polymeric coatings on metals for the study of
plastic deformations by the optical method

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, v.5, no.4, 1962, 647-652

TEXT: A possibility was investigated of obtaining optically
sensitive layers, based on epoxy resins and polyesters, suitable
for the investigation of sufficiently large plastic deformations
of metals. It was found that the coatings with different maximum
deformations, optical sensitivity and adhesiveness can be produced
from epoxy resins and various polyesters of dibasic acids and
glycols, polyesteracrylates and dibutylphthalate as plasticizers.
They could also be produced by changing the conditions of curing,
both hot and cold curing processes being suitable. For hot
curing, maleic and phthalic anhydrides are used as curing agents;
for cold curing, polyethylenepolyamines. A method of gradual
heating was employed to produce the coatings without any residual
Card 1/2

On the polymeric coatings ...

S/153/62/005/004/006/006
E075/E436

internal strains. The best results were obtained by heating to 100°C and subsequent cooling at the rate of 2°C per hour. The optical effect of the coatings was directly proportional to their deformations; this is expressed by $R_t = \alpha t(\epsilon_1 - \epsilon_2)$, where R_t - linear difference in displacement, α - optical coefficient of deformation, t - double thickness of polymer coating and ϵ_1 and ϵ_2 - the main deformations. The data obtained permit to choose appropriate resin composition and curing conditions in relation to maximum deformation produced (up to 30%). There are 3 figures and 1 table.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya i Moskovskiy institut stali (Moscow Institute of Chemical Machinery and Moscow Steel Institute)

SUBMITTED: April 24, 1962

Card 2/2

KHOSIN, G.I., kand.tekhn.nauk; SAVOST'YANOV, V.N., inzh.; SHCHEBOLEYSKAYA,
N.A., kand.tekhn.nauk; IESHIKHIY, Yu.N., inzh.; SOFOLSOV, S.I.,
doktor tekhn.nauk

Large blocks of optically active materials with unlike modulus for
models simulating the optical polarization method. Shor. trud.
MISI no.35:114-123 '71. (MIRA 14:9)

1. Moskovskiy inzhenerno-stroitel'nyy institut im. V.V.Kuybysheva
(for Savost'yanov). 2. Moskovskiy institut khimicheskogo mash-
inostroyeniya (for Sokolov).

(Synthetic products) (Optics, **Physical**)

SHAMRAYEVSKAYA, T.A., LESNICHYI, Yu. N., SHCHEGOLEVSKAYA, N.A.,
SOKOLOV, S.I.

Study of the conditions for mutual compensation of the effects due
to positive and negative birefringence.

Report presented at the 13th Conference on the high-molecular compounds
Moscow, 8-11 Oct 62

SHCHEGOLEVSKAYA, N.A.; SOKOLOV, S.I.; POLUKHIN, P.I.; VORONTSOV, V.K.

Polymer coating on metals for studying plastic deformations
by the optical method. Izv.vys.uch.zav.; khim.i khim.tekh.
5 no.4:647-652 '62. (MIRA 15:12)

1. Moskovskiy institut khimicheskogo mashinostroyeniya i
Moskovskiy institut stali.

(Protective coatings--Optical properties)

(Polymerization)

(Deformations (Mechanics))

L 12981-63

Pc-4/Pr-4 RM/WW

EPR/EWP(j)/EPF(c)/EWT(l)/EWT(m)/BDS

AFFTC/ASD/SSD Ps-4/

ACCESSION NR: AP3000523

S/0020/63/150/002/0356/0358

AUTHOR: Shamrayevskaya, T. V.; Shchegolevskaya, N. A.; Sokolov, S. I.TITLE: Changing the sign of double refraction in deformations in vitreous polymers

SOURCE: AN SSSR. Doklady, v. 150, no. 2, 1963, 356-358

TOPIC TAGS: birefringence, double refraction, methyl methacrylate, styrene, benzyl methacrylate

ABSTRACT: The study was made to explain the behavior of vitreous polymers with respect to the influence of external factors and structural change when birefringence (double refraction) sign crosses the zero value and changes. The effects of time, temperature, load size and structure on MMA (methyl methacrylate), ST (styrene) and BMA (benzyl methacrylate) as separate polymers and as a 1:1:1 copolymer were studied. The birefringence values were constant with time for the copolymer in the vitreous (15°) and highly elastic (80°) state. The effects of time on the optical coefficient were observed at transition temperature - from vitreous to elastic state (65°) or at a temperature where the coefficient changes sign (39°). Loading at 38° caused the coefficient to change

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L 12981-63

ACCESSION NR: AP3000523

signs. The aforementioned external factors being constant, the magnitude of the optical coefficient is dependent on the polymer structure as shown in the phase diagram of the tripolymer system in Fig. 1. Orig. art. has: 4 figures.

ASSOCIATION: Moskovskiy institut.khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machine Building)

SUBMITTED: 24Jan63

DATE ACQ: 12Jun63

ENCL: 02

SUB CODE: CH

NO REF SOV: CO4

OTHER: 003

Card 2/42

L 12/19-63 EPR/EWP(j)/EPF(c)/EWT(m)/EDS/ES(s)-2 AFFTC/ASD/SSD Ps-4/Pc-4/
Pt-4/Pr-4 RM/WW
ACCESSION NR: AP3001413 S/0020/63/150/004/0859/0861 83

AUTHOR: Shamrayevskaya, T. V.; Shchegolevskaya, N. A.; Sokolov, S. I. 81

TITLE: Relationship between certain physical properties and the composition of polymerization products in a ternary system of vinyl monomers

SOURCE: AN SSSR. Doklady, v. 150, no. 4, 1963, 859-861

TOPIC TAGS: polymers, copolymers, methyl-metacrylate, styrene, benzyl metacrylate, photoelasticity, polymerization, thermomechanical properties, mechanical properties, optical properties, coefficients of elasticity

ABSTRACT: Simple polymers and copolymers of methylmetacrylate, styrene, and benzyl metacrylate were studied in connection with the preparation of polymers having properties useful for photoelasticity determinations. The compounds were synthesized by inductive polymerization in the presence of benzoyl peroxide. Preliminary to polymerization, a tetrapolymer was obtained at 60-80C. Subsequently, polymerization was carried out by increasing the temperature stepwise to 35, 45, 55, 80 and 100 degrees until the product lost stable properties. Solid samples 5 x 10 x 80 mm sup 3 were studied. Thermomechanical, mechanical and optical properties, as well as the composition of the various polymers,

Card 1/2

L 12419-63

ACCESSION NR: AP3001413

2

are presented in a table. Thermomechanical curves were obtained on a Polani-type dynamometer. Vitrification temperature was obtained by extrapolation to zero stress. Linear coefficients of elasticity were determined by means of a strain gauge. Optical coefficients under stress were determined on a coordinate-synchronized polarimeter KSP-5. This study indicates that it is possible to design series of materials with a desired combination of mechanical and optical properties by varying the composition of copolymers in accordance with the data on the effect of single components in a multicomponent mixture of monomers. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machine Building)

SUBMITTED: 24Jan63

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 001

OTHER: 000

Card 2/2

KOPCHEN, V.I.; OVSIN, A.N.; ARH. SIBIRSKI, S.A.

Polymeric materials in the polymerization-thermal method of
determining stresses. Part 2: Use of volume contraction and
refraction in studying the reaction kinetics of cross-linked
systems. Izv. vuz. khim. ser.; ser. 1 ser. khim. No. 4:
197-200 (1971) (Eng. transl. (1971))

U.S. Library of Congress and U.S. Government Printing Office
Washington, D.C.

NORKINA, R.S.; SOKOLOV, S.I.; SHCHEGOLEVSKAYA, N.A.

Polymeric materials for the optical polarization method of determining stresses. Part 5: Terminal stages of copolymerization in a bulk of unsaturated polyesters and vinyl monomers. Izv. vys. ucheb. zav., khim. i khim. tekhn. 7 no.5:839-841 '64 (MIRA 18:1)

1. Kafedra fizicheskoy khimii Moskovskogo instituta khimicheskogo mashinostroyeniya.

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

Interaction of polymers with plasticizers. Part 7: Thermo-optical characteristics of the action of plasticizers on polymethyl methacrylate. Koll. zhur. 27 no.6:806-809 N-D '65.
(MIRA 18:12)

1. Moskovskiy institut khimicheskogo mashinostroyeniya i Moskovskiy oblastnoy pedagogicheskiy institut imeni N.K. Krupskiy. Submitted June 26, 1964.

L 41649-65 EPF(c)/EWP(j)/EWT(m)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5006380

S/0153/64/007/006/0997/1002

33
32
B

AUTHOR: Norkina, R. S.; Sokolov, S. I.; Shchegolevskaya, N. A.

TITLE: Polymers for stress analysis by the optical polarization method
VI. Physical and mechanical properties under stepwise polymerization conditions

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 6, 1964, 997-1002

TOPIC TAGS: polymerization, physical chemistry, stress analysis

ABSTRACT: The success of the optical method of stress analysis depends to a significant extent on the quality of the materials which are being used. Material shrinkage during the formation process is theoretically important in the production of high quality materials. In this article the effect of temperature-time parameters during polymerization on the physical and mechanical properties of products based on polyesters and vinyl monomers is studied and the conditions for the production of a chemically stable product are determined. Two types of changes in the properties of the system were investigated: irreversible changes associated with chemical processes and reversible changes of purely physical nature associated with the degree of deviation of the structure of the material from the equilibrium

Card 1/3

L 41649-65

ACCESSION NR: AP5006380

structure. Stepwise polymerization was carried out by maintaining the temperature of polymerization at some predetermined value for a definite period of time then increasing the temperature to another value for a predetermined time interval, etc. It was found that during structuring of the polymer system its physical and mechanical properties undergo significant changes in the vitreous state, reaching a stable state after high temperature treatment. Specific refraction was taken as a convenient parameter for monitoring the chemical process since it is independent of the physical state of the substance. When cooling conditions are varied there is a significant change in the specific volume and volume refraction, which is a function of the refractive index at constant specific refraction. The structuring processes are marked by an increase in the modulus of elasticity both chemically (cross-linking) and physically (when the temperature is lowered) and are accompanied by an increase in the optical coefficient within the vitrefication region. Orig. art. has: 5 tables and 2 figures.

ASSOCIATION: Kafedra fizicheskoy khimii Moskovskogo instituta khimicheskogo
machinostroyeniya (Physical Chemistry Department, Moscow Institute of Chemical
Machine Building)

Card 2/3

L 41649-65 *i*
ACCESSION NR: AP5006380

SUBMITTED: 20Mar64

ENCL: 00

SUB CODE: 00, 00 *0*

NO REF SOV: 003

OTHER: 002

cc
Card 3/3

NURKINA, R.S.; SOBOLOV, S.I.; SHCHEGOLEVSKAYA, N.A.

Polymeric materials for the polarization-optical method of studying of stresses. Part 6: Study of physical and mechanical properties under the addition process of polymerization. Izv.vys. ucheb.zav.; khim.i khim.tekh. 7 no.6:997-1002 '64.

(MIRA 18:5)

I. Moskovskiy institut khimicheskogo mashinostroyeniya, kafedra fizicheskoy khimii.

FEDERNIKOVA, M.F.; DOROLOV, S.I.; FELDMAN, R.I.; SACHEGOLEVSKAYA, N.A.

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

(MIRA 18:12)

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

ACC NR: AT7002097

Materials with different values of modulus of elasticity may be obtained on the same basis. A study of E40 and Ed5 epoxy resins with maleic and methyltetrahydrophthalic anhydride hardeners is also discussed. The following properties of these resins were studied: refraction index, density, transition temperature, modulus of elasticity, strain-optical coefficient, and time-edge effect. N. R. Vedernikova, Yu. N. Lesnichiy, R. S. Norkina, T. V. Shamrayevskaya, and N. I. Element took part in the work. Orig. art. has: 5 tables and 7 figures.

SUB CODE: 11/ SUBM DATE: 14Jun66/ ORIG REF: 009

Card 2/2

ALIYEV, M.A.; MITROFANOV, G.G.; MAL'KOVSKIY, O.L.; SHCHEGOLIKHINA, I.N.

Two cases of osteopetkilezia. Zdrav. Kazakh. 23 no.4:73-74 '63.
(MIRA 17:5)

1. Iz Kazakhskogo instituta onkologii i radiologii (direktor -
detsent B.N. Mugmenov).

SHCHECOLIKHINA, Z. Yu. (Kazan')

A rare case of Recklinghausen's disease. Kaz. med. zhur. 4:
65 JI-Ag'63 (MIRA 17:2)

SHCHEGOL'KOV, A.N. [Shchegol'kov, O.M.]

Vascularization of the synovial membrane of the joint as
related to its function. Dop. AN URSR no.11:1536-1539 '64.
(MIRA 18:1)

1. Institut zoologii AN UkrSSR. Predstavleno akademikom
AN UkrSSR V.G. Kas'tianenko [Kas'tianenko, V. G.].

a

SHCHEGOL'KOV, A.N. [Shchehol'kov, O.M.]

Morphological indices of the functional condition of the blood
channel of the synovial membrane. Pratsi Inst.zool.AN URSS
18:66-76 '62. (MIRA 16:1)
(Synovial membranes--Blood supply)

SHCHEGOL'KOV, I.N., inzh.

Bench system of drifting in hard rocks, Shakht, stroi. 6
no.4:26 Ap '62. (MIRA 15:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut gornokhi-
micheskogo syr'ya.

(Mining engineering)

SHCHEGOL'KOV, I.M., inzh.

Conference on over-all mechanization and automation of production
processes. Bezop.truda v prom. 7 no.2:37 f '63. (MIRA 16:2)
(Technological innovations) (Automation)

TSARIYEV, A.I.; SHCHEGOL'KOV, V.F.

Exhaust unit. Mashinostroitel' no.10:42 0 '63. (MIRA 16:12)

SHCHEGOL'KOV, Ye. A.

20000

Ščegol'kov, E. A. On the uniformization of certain B -sets.
Doklady Akad. Nauk SSSR (N.S.) 59, 1065-1068 (1948).
(Russian)

The following theorem is proved. Let A be any Borel set in the plane such that $A \cap E[(x, y); x=x_0]$ is an F_σ for all x_0 . Then there exists a subset C of A such that C is a Borel set, $C \cap E[(x, y); x=x_0]$ contains at most one point, and C and A have identical projections on the X -axis.

E. Hewitt (Seattle, Wash.).

Smol

Source: Mathematical Reviews,

Vol. 9 No. 8

STSCHEGOL'KOV, E. A.

✓★ Lyapunov, A. A., Stschegolkow, E. A., und Arsenin, 1 - F/W
W. I. Arbeiten zur deskriptiven Mengenlehre. Deut-
scher Verlag der Wissenschaften, Berlin, 1955. iii +
108 pp. DM 15.15.

Translation of a collection of papers on the descriptive
theory of sets: A. A. Lyapunov, Introduction; E. A.
Stšegol'kov, Elements of the theory of B-sets; V. Ya.
Arsenin and A. A. Lyapunov, The theory of A-sets;
A. A. Lyapunov, B-functions [Uspehi Mat. Nauk (N.S.)
5 (1950), no. 5(39), 11-13, 14-44, 45-108, 109-119; MR 12,
597].

Handwritten signature and number 222

Shirley W. York, "and the... of...
and a listing of certain..."
... (U.S. State Dept.
... (U.S. State Dept.)

SHCHEGOL'KOV, Ye.A.

Some plane B-sets which can be split. Uch.zap.MGZPI no.3:
187-195 '59. (MIRA 13:5)
(Aggregates)

75(1)

SOV/20-124-4-14/67

AUTHOR: Shchegol'kov, Ye.A.

TITLE: On Uniformalization and Splitting of Some Sets (Ob uniformizatsii i rasshcheplenii nekotorykh mnozhestv)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 4, pp 783-785 (USSR)

ABSTRACT: The first part of the paper considers the uniformalization of plane sets and joins the papers of N.N.Luzin, P.S.Novikov, A.A. Lyapunov, V.Ya.Arsenin, and other authors. The author gives a series of new cases of uniformalization (6 theorems), e.g.: A plane A_2 -set which intersects with the straight lines $x = \text{const.}$ along closed sets and the projection of which onto the axis of abscissas is a B_2 -set, is uniformalized by a B_2 -set. In the second part the author considers a plane B-set, the intersections of which with the straight lines $x = \text{const.}$ are sets of the type F . The author gives a class of plane B-sets representable as the sum of countably many B-sets, the intersections of which

Card 1/2

On Uniformalization and Splitting of Some Sets

SOV/20-124-4-14/67

with the straight lines $x = \text{const.}$ are closed sets.

There are 15 references, 10 of which are Soviet, 1 Japanese, 2 Polish, and 2 Hungarian.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni V.I. Lenina (Moscow State Pedagogical Institute imeni V.I. Lenin)

PRESENTED: October 14, 1958, by P.S. Aleksandrov, Academician

SUBMITTED: October 9, 1958

Card 2/2

GREYSUKH, M.V.; YERMILOV, A.A.; ZALESSKIY, Yu.Ye.; KAZYMOV, A.A.;
KATSEVICH, L.S.; KIRPA, I.I.; KIREYEV, M.I.; KNYAZEVSKIY,
B.A.; KOFMAN, K.D.; KRZHAVANIK, L.V.; KUZNETSOV, P.V.;
MOROZOV, K.S.; RAKOVICH, I.I.; RYABOV, M.S.; SVENCHANSKIY,
A.D.; SOKOLOV, M.M.; SYCHEV, L.I.; TVERDIN, L.M.; KHEYFITS,
M.E.; SHULIMOV, Ye.V.; EPSHTEYN, L.M.; SHCHEGOL'KOV, Ye.I.;
TSAPENKO, Ye.F.; FEDOROV, A.A., glav. red.; SERBINOVSKIY, G.V.,
red.; BOL'SHAM, Ya.M., red.; BRANDENBURGSKAYA, E.Ya., red.;
TVERDIN, L.M., red.; FRIDKIN, L.M., tekhn. red.

[Handbook for power engineers of industrial enterprises in
four volumes] Spravochnik energetika promyshlennykh pred-
priyatii v chetyrekh tomakh. Moskva, Gosenergoizdat.
Vol.2. [Electric-power supply (conclusion), use of electric
power and electrical equipment in some branches of industry]
Elektrosnabzhenie (okonchanie), priemniki elektroenergii i
elektrooborudovanie nekotorykh otraslei promyshlennosti. Pod
obshchei red. A.A.Fedorova (glav. red.), G.V.Serbinovskogo i
IA.M.Bol'shama. 1963. 880 p. (MIRA 16:7)
(Power engineering—Handbooks, manuals, etc.)
(Electric power distribution)

1. KAZHDAN, Ye. M., Eng: SHENEGOL'KOV, Z.N. Eng.: ROZANOV, S.P., ref.: GEYLER, L. B., Dr.
2. USSR (CUB)
4. Kniazevskii, B. A.
7. "Electric power supply of industrial enterprises."
A. A. Fedorov, B. A. Knyazevskiy. Reviewed by Engs. Ye. M. Kazhdan,
Z. N. Shenegol'kov, Prof. S. P. Rozanov, Dr. L. B. Geyler.
Elektrichestvo No. 10, 1952.
9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

ANTONOV, I.G.; VAKHTEL', M.I.; SHCHEGOL'KOVA, A.I.

The VMS-32 pipe cutting machine. [Suggested by: I.G. Antonov, M.I. Vakhtel', A.I. Shshhegol'kova]. Rats. i izobr. predl. v stroi. no. 142:3-5 '56. (MLRA 10:4)

(Pipe cutting)

FOMIN, V.G.; SARANTSEV, V.F.; SHCHEGOL'KOVA, L.A.; GUREVICH, M.A.

Scanning camera for studying dislocations. Prib. i tekhn.
eksp. 9 no.2:176-177 Mr-Ap'64. (MIRA 17:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
institut redkometallicheskey promyshlennosti.

TSYGAN, V.F.; CHISTYAKOVA, M.F.; BYKOV, P.N.; GIBEVICH, M.A.;
SHCHEGOL'KOVA, L.A.

Thermostatic devices for X-ray cameras. Sav. lab. 30
no.5:630 '64. (MIRA 17:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy i projektnyy
institut redkometallicheskiy promyshlennosti.

L 6725-65 EWT(m)/EWP(q)/EWP(b) IJP(c)/AFWL/AS(mp)-2/RAEM(t) JD

42
48

ACCESSION NR: AP4046468

S/0032/64/030/010/1227/1229

AUTHORS: Fomin, V. G.; Shchegol'kova, L. A.; Belyatskaya, N. S.; Tsygan, V. T.TITLE: X-ray micrographic phenomena of dislocations in silicon

SOURCE: Zavodskaya laboratoriya, v. 30, no. 10, 1964, 1227-1229

TOPIC TAGS: x-ray crystallography, dislocation net, silicon/ URS-50 IM instrument, BSV 6Cu tube, GUR 4 instrument

ABSTRACT: The setup used by the authors (Fig. 1 on the Enclosure) is designed to obtain topographic images of defects in silicon crystals. A beam of x-rays from the tube f has an angle of divergence α that is much greater in the plane of the figure than in the plane normal to it. The extreme rays are shown. The crystal K , with reflecting planes $(1\bar{1}0)$ at right angles to the planes of the polished specimen (111) , is positioned for proper reflection by measuring transmitted rays with the Geiger counter G . A nickel filter cuts out beta radiation. To reduce exposure time, high voltage is applied to the tube, but this generates some radiation of undesirable wavelength. The diaphragm is collimated to pass only the desirable part of the spectrum. The x-ray source for this work was an

Card 1/3

L 6725-65
ACCESSION NR: AP4046468

URS-50 IM instrument with a BSV-6Cu tube. The basic instrument was a GUR-4 with a special device for x-ray diffraction micrography. The operational constants were: voltage 25-26 kv, current 10 ma, exposure time 7-8 hrs; tube-specimen focal length 250 mm, specimen-film distance 10 mm. Photographs obtained by this method clearly show the pattern and orientation of dislocations in the crystal. Orig. art. has: 3 figures.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoj promyshlennosti (State Scientific Research and Planning Institute of the Rare Metal Industry)

SUBMITTED: 00

ENCL: 01

SUB CODE: SS

NO REF SOV: 003

OTHER: 002

Card 2/3

L 6725-65

ACCESSION NR: AP4046468

ENCLOSURE: 01

0

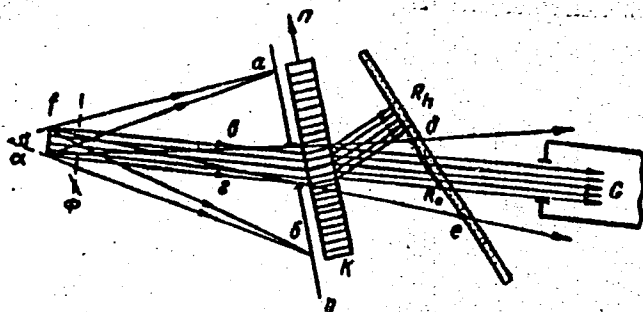


Fig. 1. Setup for x-ray diffraction micrography.

Card 3/3

VLADZIYEVSKIY, A.P., doktor tekhn. nauk; ZOTOV, V.K.; ZUZANOV, G.I.; PEREPELITSEY, P.G.; SVIRIDENKO, S.Kh.; SHCHEGOL'KOVA, L.I.; BORUSHMOY, I.V., red.; KOGAN, F.L., tekhn. red.

[Machine-tool industry in Italy; survey] Stankostroenie Italii; obzor. Moskva, TSentr. in-t nauchno-tekhn. informatsii mashinostroeniia, 1961. 172 p. (MIRA 14:9)

(Italy—Machine-tool industry)

SHCHEGLOVSKIY, G.V., inzh.

Using plastics in the agricultural machinery industry.
Mashinostroenie no. 2:87-89 Mr-Ap '64. (MIRA 17:5)

SECRET/CONFIDENTIAL, R. 10.

Shehegolyutin, M. Ye., Ryabikov, G. G., Kukhorenko, K. G., Chuksin, Yu. V., Korotkov, V. K., Works completed on the SRT-1102 "Alazeya" during the second expedition in the middle part of the Atlantic Ocean, Byul. tekhn.-ekon, inform. Sovnarkhoz. Kaliningradsk. ekon. adm. r-na (Bulletin of Technical and Economic Information of the Sovnarkhoz of Kaliningrad Economic Administrative Region), No 3-4, 1958, p 22-25; (RZhGeog 11/59-31841)

SHCHEGOTSKIY, I.I.

Adenoma of the lacrimal sac cavity originating in the mucosa of
the cells of the ethmoid labyrinth. Opt. zhur. 16 no.2:106-108
'61. (MIRA 14:3)

(LACRIMAL ORGANS—TUMORS)

СЫСЫНОВСКИЙ, И. И. Major of the Medical Service--The Effectiveness of the
Operation of Activation of the Upper Lacrimal Duct.

Военно-Медицинский Журнал, No. 11, 1971, pp. 26-29.

SHCHEGOTSKIY, I.I., mayor meditsinskoy sluzhby

Effectiveness of the operation for the activation of the upper
canaliculus lacrimalis. Voen.-med. zhur. no.11:73-74 N '61.
(MIRA 15:6)

(LACRIMAL ORGANS--SURGERY)

VIL'NENSKIY, Ya.Ye.; SAVINKOVA, Ye.I.; BOROVSKIKH, L.A.; SHCHEGROV, L.N.

Chlorination rate of magnesium oxide in a molten chloride. Trudy
Ural.politekh.inst. no.96:74-81 '60. (MIRA 14:3)
(Magnesium oxide) (Chlorination)

SHCHEGROV, L.N.

Reaction between titanium tetrachloride and oxygen. Trudy Ural.
politekh.inst. no. 06: 82-92 '60. (MIRA 14:3)
(Titanium chloride) (Oxygen)

S/020/61/110/003/016/020
B103/B101

AUTHORS: Shchegrov, L. N., and Vil'nyanskiy, Ya. Ye.

TITLE: Process and products of hydrolytic decomposition of titanium tetrachloride

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 3, 1961, 620-622

TEXT: The interaction between $TiCl_4$ vapor and water vapor was studied in a dynamic system between 25 and 750°C at molar ratios of $TiCl_4:H_2O = 1:1; 1:2; 1:3; \text{ and } 1:4$. A stream of inert carrier gas was saturated with a definite quantity of $TiCl_4$ vapor, and another one with H_2O . Then, the two gas streams were united in a reactor at test temperature. Contrary to R. F. Hudson (Ref. 1, see below), a white aerosol was formed immediately when the two gas streams met. The degree of hydrolytic decomposition of $TiCl_4$ is not noticeably affected by the average time (11.85 - 0.23 sec) for which the reagents are kept in the reaction zone. Consequently, the hydrolysis of $TiCl_4$ in the vapor phase sets in very rapidly. The particles of solid reaction products formed between 25 and 150°C are very fine, but are

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Process and products of...

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agglutinated to form shapeless hygroscopic lumps, so that their further investigation has to be performed in a dry air chamber. Their yellow color gets paler and paler with increasing hydrolyzation temperature and molar concentration of the water in the reaction mixture. The products recovered are good dielectrics. Their composition is a function of the production conditions. A change of the $TiCl_4:H_2O$ ratio from 1:1 to 1:3 results in a reduction of the content of Ti and Cl in the products of hydrolysis. At a ratio of 1:4, the Ti content increases again, whereas the Cl content decreases in products obtained at 25, 50, and 75°C. This is related to the interaction between the products of hydrolysis and the vapor of "excess" water effecting the liberation of HCl. The composition of the products of hydrolysis is described by the formulas: $TiO_a(OH)_{2-2a}Cl_2$, where $a = 0 - 1$; $Ti(OH)_xCl_{(4-x)} \cdot nH_2O$, where $x:(4-x) = 1 - 3$. Thus, the hydrolytic decomposition of $TiCl_4$ cannot be defined by a simple equation. Even at 300°C, hydrolytic decomposition of $TiCl_4$ was not completed (15% of Cl ions in the reaction product). At 500°C, TiO_2 was formed with 2% Cl ions at

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Process and products of...

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B103/B101

most. At 750°C, the content of Cl ions was 0.1-0.2%. The graph representing the relation between the increase in weight of the hydrolytic products obtained between 25 and 100°C and the time for which they were kept in air begins with a steep rise, attains a maximum after about 1 hr (ca 34% increase in weight), followed by a slight fall. This is ascribed to a chemical reaction between $TiCl_4$ and H_2O , in which water adsorption is accompanied by liberation of HCl. After some time the rate of water adsorption equals the rate of hydrolysis (peak of the graph). Subsequently, hydrolysis prevails over sorption. By using Debye-Scherrer patterns it has been found that the products of $TiCl_4$ hydrolysis in the vapor phase between 75 and 150°C form a new crystalline phase which is not found any more at 300°C. Between 25 and 50°C and at a ratio of $TiCl_4:H_2O = 1:1; 1:2, \text{ and } 1:3$, x-ray diffraction analysis reveals that the products have no crystalline structure. After storage in moist air, their structure becomes crystalline like that of the products obtained at 75 and 150°C. Between 300 and 750°C, TiO_2 of anatase structure is formed. There are 3 figures and 6 references: 2 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: Ref. 1: R. F. Hudson, Proc. of the XI Intern. Card 3/4

Process and products of...

S/020/61/140/003/016/020
B103/B101

Congr. of Pure and Appl. Chem., 1, London, 1947, p. 297; Ref. 2: R. L. Powell, Chem. Eng. Progr., 50, 11, 578 (1954); Ref. 3: L. W. Rowe, W. R. Opie, J. Metals, 7 (11), sect. 1, 1189 (1955).

ASSOCIATION: Ural'skiy politekhnicheskii institut im. S. M. Kirova
(Ural Polytechnical Institute imeni S. M. Kirov)

PRESENTED: April 14, 1961 by S. I. Vol'fkovich, Academician

SUBMITTED: April 2, 1961

Card 4/4

S/137/62/000/006/043/163
A006/A101

AUTHOR: Shchegrov, L.N.

TITLE: Investigating the interaction of titanium tetrachloride with oxygen

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 15, abstract 6G109
(In collection: "Titan i yego splavy", no. 5. Moscow, AN SSSR, 1961,
211 - 219)

TEXT: The interaction of $TiCl_4$ vapors with dehydrated O was studied by the dynamic method. The experiments were carried out in a 25 - 1100°C temperature range with O_2 : 1, 1 : 1.06; 1 : 1.64 and 1 : 10.6 ratios of $TiCl_4$: O molar concentrations in the reaction mixture. The total consumption of the gaseous mixture per unit of time was maintained at 18 liters/hour. TiO_2 and Cl_2 were found to be products of the TiO_2 and Cl_2 reaction which begins at 500 - 600°C; no formation of Ti oxychlorides was observed. An increase of the temperature > 600°C and of the O content in the reaction mixture raised sharply the degree of $TiCl_4$ transformation into TiO_2 . The magnitude of the isobaric-isothermal potential for the reaction of $TiCl_4$ with O were thermodynamically calculated. The thermo-

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S/157/62/000/006/043/103
A006/A101

Investigating the.....

dynamically possible degree of $TiCl_4$ transformation into TiO_2 was computed.

L. Vorob'yeva

[Abstracter's note: Complete translation]



Card 2/2

SHCHEGROV, L.N.; VIL'NYANSKIY, Ya.Ye.; BAYBAKOV, D.P.

Synthesis of the products of titanium tetrachloride hydrolysis.
Trudy IREA no.25:470-478 '63. (MIRA 18:6)

SHCHEGROV, I.N.

Phase composition of the products of hydrolysis of titanium tetrachloride. Zhur. fiz. khim. 39 no. 12:912-914 Ap '63.

(MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv.

L 30232-66 EWT(m)/ENP(t)/ETI IJP(c) JD

ACC NR: AP6013886

(A)

SOURCE CODE: UR/0073/65/031/011/0223/0227

AUTHOR: Shchegrov, L. N.; Kozachuk, A. S.; Skrobotun, V. N.; Ryadchenko, A. G.;
Gol'tseva, V. S.

51
49
B

All-Union

ORG: Donets Branch, Scientific-Research Institute of Chemical Reagents and High-Purity Chemical Substances (Donetskiy Filial Vsesoyuznogo nauchno-issledovatel'skogo instituta khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv)

TITLE: Preparation of magnesium oxide of varying pseudostructure

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 31, no. 11, 1965, 1223-1227

TOPIC TAGS: magnesium oxide, magnesium compound, carbonate, chemical decomposition, x ray diffraction

ABSTRACT: The purpose of the study was to develop methods for preparing multiform crystals of thermally unstable magnesium compounds having such thermomechanical strength that they preserve their form on decomposing to magnesium oxide, in order to influence the form of the MgO particles obtained. Prismatic magnesium carbonate crystals which retained their form during decomposition to MgO (in a muffle furnace at 740-760°C) were obtained by combining magnesium nitrate and sodium carbonate solutions. The size of MgCO₃ crystals formed depends on the stirring rate of the reaction mixture. MgO of spheroidal form was obtained by thermal decomposition of spheroidal MgCO₃ formed by combining magnesium nitrate or sulfate solutions with potassium carbon-

UDC: 546.46

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L 30232-66

ACC NR: AP6013886

ate. The size of the spheroidal $MgCO_3$ particles was also affected by the stirring rate. MgO particles of lamellar form were obtained by thermochemical decomposition of magnesium hydroxide of the same form, and MgO particles of cubic form, 6-9 μ in size and larger, were prepared by thermal decomposition of cubic magnesium oxalate. X-ray diffraction analysis of prismatic, spheroidal, lamellar, and cubic MgO showed their internal structure to be the same, i. e., consisting of a face-centered NaCl-type cubic lattice. The authors thank L. I. Shvorneva and N. G. Kisel' for determining the structure of magnesium oxide and carbonates. Orig. art. has: 7 figures. 2

SUB CODE: 07/ SUBM DATE: 09May64/ ORIG REF: 007/ OTH REF: 009

Card 2/2 *10*

L 63472-65 EWT(j)/EWT(m)/EWP(w)/EPF(c)/EWA(d)/T/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5019793

UR/0076/65/039/007/1669/1673
541.124/128

AUTHOR: Shchegrov, L. N.; Mondin, L. Ya.; Gol'tseva, V. S.; Ryadchenko, A. G.;
Skrobotun, V. N.

TITLE: Reactivity of magnesium oxide with various pseudostructures

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 7, 1965, 1669-1673

TOPIC TAGS: ¹¹ ²¹ magnesium oxide, ferric oxide, chromium oxide, ferrite

ABSTRACT: Studies performed in the authors' laboratory showed that magnesium oxide can be obtained in various forms (spheroidal, cubic, prismatic, and lamellar) in addition to the amorphous modification. X-ray analysis showed that all these types of MgO have the NaCl structure, and therefore are pseudostructural modifications. The reactivity of MgO in these various forms was studied by taking as an example the solid phase reaction in the MgO-Cr₂O₃-Fe₂O₃ system. The mixture for the synthesis of the ferrite powder was prepared by mixing the ground oxides (21.9% Cr₂O₃, 25.7% MgO, 53.4% Fe₂O₃). It was found that the grinding of the spheroidal, cubic, and prismatic MgO causes a complete breakdown of the geometry of the particles, so

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L 63472-65

ACCESSION NR: AP5019793

2

that they are converted into an amorphous mass. The powders were presintered, pressed, and sintered. The dependence of the electromagnetic properties of the ferrites on the form of the initial MgO particles and on the reaction temperature was determined from the change in the saturation magnetization, width of the resonance absorption band, Curie temperature, and resistivity. No appreciable differences were found in the electromagnetic properties of ferrite samples prepared from the various MgO pseudostructures. These properties are considerably improved as the temperature rises; this is because they depend not only on the extent of the solid-phase reaction, but also to a large degree on the amount of the synthesized spinel, whose rate of formation increases rapidly with the firing temperature of the ferrite. Orig. art. has: 3 figures, 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv, Donetskiiy filial (All-Union Scientific Research Institute of Chemical Reagents and High-Purity Chemicals, Donetsk Affiliate)

SUBMITTED: 22Apr64

ENCL: 00

SUB CODE: GC

NO REF SOV: 010

OTHER: 004

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Card 2/2

L 34535-65 EWP(j)/EWT(m) Pc-4 RM

ACCESSION NR: AP5001084

S/0286/64/000/022/0044/0044

AUTHORS: Lukashevich, I. P.; Kazakova, L. P.; Shchegrova, K. A. ¹³_B

TITLE: A method for obtaining ¹⁵wax admixture for protecting rubber products.
Class 23, No. 166435 ✓

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1964, 44

TOPIC TAGS: rubber, rubber product, rubber technology, rubber research,
hydrocarbon, petroleum, nitrogen, paraffin

ABSTRACT: This Author Certificate presents a method for obtaining (by de-oiling solid petroleum hydrocarbons) a wax admixture for protecting rubber products from nitrogen cracking. Petrolatum is first subjected to de-oiling and is then deparaffinized with carbamide or by means of progressive de-oiling.

ASSOCIATION: none

SUBMITTED: 11Mar64

ENCL: 00

SUB CODE: IE, MT

NO REF SOV: 000

OTHER: 000

Card 1/1

L 34186-65 EWT(m)/EWP(j)/T - Pc-4 RM

ACCESSION NR: AT5006943

S/2982/64/000/051/0195/0198

21
19
B+1

AUTHOR: Shchegrova, K. A.; Kazakova, L. P.; Vinogradova, T. I.

TITLE: Preparation of microcrystalline waxes to protect tire¹⁵ rubber against the action of ozone

SOURCE: Moscow. Institut neftekhimicheskoy i gazovoy promyshlennosti. Trudy, no. 51, 1964. Neftekhimiya, neftekhimicheskiye protsessy i neftepererabotka (Petroleum chemistry, petrochemical processes and oil refining), 195-198

TOPIC TAGS: ozone, antioxidant, tire rubber, rubber oxidation, wax, ceresin, secondary paraffin, microcrystalline wax

ABSTRACT: The work, carried out in cooperation the Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Tire industry scientific research institute), was devoted to the preparation and study of microcrystalline waxes obtained from Soviet raw materials and analogous to imported waxes in protective properties. The waxes obtained - a secondary paraffin, ceresin, and hydrocarbons of this ceresin which do not react with carbamide - were tested in rubber mixtures and found to be equal and sometimes superior to foreign imports. The physicochemical

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L 34186-65

ACCESSION NR: AT5006943

2

properties of the waxes and their protective properties in protective mixtures are tabulated. The waxes are recommended for use together with chemical antiozonants as agents for preventing the cracking of tire casings. Orig. art. has: 2 tables.

ASSOCIATION: Institut neftekhimicheskoy i gazovoy promyshlennosti, Moscow (Petrochemical and gas industry institute)

SUBMITTED: 00

ENCL: 00

SUB CODE:MT,FP

NO REF SOV: 001

OTHER: 003

Card 2/2

SHCHEGROV, L.N.

Regulate the requirements to initial raw materials used in the
production of ferrite materials. Standartizatsiia 29 no.2:42 F
'65. (MIRA 18:4)

SHCHEGROVA, K A

POTENTIOMETRIC DETERMINATION OF THE ACIDITY OF LUBRICATING OILS

CA

γγ

Potentiometric determination of the acidity of lubricating oils V. I. Val'dman and K. A. Shchegrova. *Zashchita Lub.* 7, 917-21 (1968). In the potentiometric determination of the acidity of fresh and waste lubricating oils with the quinhydrone electrode, the titration under atm. conditions instead of in an inert medium (N or H) gives equally good results. In the American standard method better results can be obtained by the use of a solvent mixt. of iso-AmOH, C₂H₅ and CCl₄ instead of BuOH. Twenty references. Chus. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1957 AND THE ORDER) PROCESSES AND PROPERTIES INDEX

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

SHCHEGROVA, K. A. 2

(Handwritten: 1A)

Determination of molecular weights of high-boiling oil fractions. K. S. Ramalyn and K. A. Shchegrova. *Zvezdskaya Lab. 8*, 404-B(1959).—Rpts. by the authors and other workers on the detn. of the av. mol. wt. of pure hydrocarbons and high-boiling oil fractions by the cryoscopic method are reviewed critically. In detg. the temp. depression (Δt) it is necessary to introduce corrections by extrapolating the cooling curve after the start of crystn. The cryoscopic const. of the solvent (C_{H_2}) should be detd. experimentally in each case and reduced to zero concn. to make it independent of the nature of the dissolved compd. In view of the effect of the concn. of the dissolved compd. upon the apparent mol. wt. the former should be extrapolated to zero concn. The mol. wts. of α -methylnaphthalene and naphthalene as detd. by this modified method differ from the theoretically calcd. values by less than 0.05%. Tabulated and graphical data of mol. wt. detns. of solar and lubricating oils are given. Curves are given showing the cooling rates of C_{H_2} and C_{H_2} soln. of naphthalene, cryoscopic consts. of C_{H_2} in various hydrocarbons, and the effect of the concns. of naphthalene and α -methylnaphthalene upon their mol. wts. B. Z. Kamich

ASS. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

S. 52/60/000/005/002/002
B001/B004

AUTHORS. Yermakova, I. I., Kazakova, L. F., and Shchegrova, K. A.

TITLE. Methods of Chromatographic Partition of Naphthen-¹ From
Aromatic Hydrocarbons Family Petroleum Fractions

PERIODICAL. Izvestiya Akademiya Nauk SSSR, Khim. Ser., Vol.
1960, No. 1, pp. 15-18

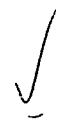
TEXT. To determine more precisely the different used methods of chromatographic partition of the above hydrocarbons (dealt with by the authors already earlier (Table 1)) the authors attempted, in the present investigation, to choose an adsorbent agent which, on the one hand, separates sufficiently the paraffin naphthen hydrocarbons from the aromatic ones and, on the other hand, has a maximum capability of fractionating aromatic hydrocarbons according to their structure. The following mixtures were subjected to chromatographic partition. Decalin and naphthalene (Table 1); isopropyl benzene and α -methyl naphthalene (10%, 10% Tables 3 and 4); dibenzyl and α -methyl naphthalene

Car: 11

Chromatography. Partition of
Naphthalene From Aromatic Hydrocarbons of
Oily Industrial Fractions

3, 150/20, 000/002/002/002
B001/B054

50% : 50% mixture of n-propyl benzene and 1-methyl naphthalene 50% : 40%
 (Table 1). The authors started with separating the paraffin naphthalene
 fractions from the aromatic oils. The following materials were used as
 adsorbent agents: 1) silica gel of the ASK type; 2) activated aluminum
 oxide (AL); 3) aluminum oxide catalyst; 4) mixture of silica gel ASK and
 activated AL (50:50). Table 2 shows that the mixture of silica gel and
 activated AL is proved to be the most effective adsorbent agent for
 separating naphthalene hydrocarbons from aromatic oils on the basis of
 extractability with saturated hydrocarbons. Table 3 shows that in the
 chromatography partition of aromatic hydrocarbons activated carbon can
 be used at the ratio indicated there. Table 4 shows that in partition
 column of a ratio of 1:1 between neutral hydrocarbons and adsorbent
 (mixture of silica gel ASK and activated AL 50:50). Table 5 shows that in the
 chromatography of aromatic hydrocarbons it is possible to use a mixture of
 silica gel and activated AL (ratio 1:1); the partition was
 practically completely identical. Table 6 shows that a partition did
 not take place at the ratio of 1:1 between neutral hydrocarbons and



Methods of Chromatographic Partition of
Naphthenes From Aromatic Hydrocarbons of
Only Petroleum Fractions

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B001/B054

activated Al_2O_3 . In contrast to the ratios 1:10 and 1:15. Thus, the experiments of chromatographic partition of aromatic hydrocarbons showed once again that activated Al_2O_3 and activated carbon have the best selectivity with respect to aromatic hydrocarbons of different structures. Further, the authors separated aromatic hydrocarbons of the heavy desulfurized distillate of Shkapovskaya petroleum by activated Al_2O_3 , and obtained three fractions of aromatic hydrocarbons (Table 7). To obtain more accurate data on the structure of products, they determined to what extent the absence of the missing hydrogen portion is caused by the presence of naphthene rings, or by that of aromatic rings. Therefore, they hydrogenated the fractions to be examined (Table 8). The data of Table 8 show that after hydrogenation the number of carbon atoms in these fractions was unchanged, while the hydrogen amount had increased. On the basis of the investigations, it is concluded that paraffin naphthene hydrocarbons are most perfectly separated from aromatic ones by means of a mixture of silica gel ASK and activated Al_2O_3 , and that aromatic hydrocarbons are most accurately fractionated according to their

Card 5, 4

Methods of Chromatographic Partition of
Naphthenes From Aromatic Hydrocarbons of
Oily Petroleum Fractions

S/152/80/000/005/002/002
B001/B054

structure by means of activated Al_2O_3 . There are 8 tables.

ASSOCIATION: Научно-исследовательский институт нефтехимической и газовой
пробышленности им. академика И. М. Губкина (Москва
Institute of the Petrochemical and Gas Industry imeni
Academician I. M. Gubkin)

SUBMITTED: June 9, 1959



Card 1/4

8/0-1/61/00/00/01/003
1005/1005

Original from: *Reflexivnyy zhurnal*, Kharkov, 1961, No. 6, p. 445, 4 illus.

AUTHORS: Chernozhukov, M. I., Lukashovich, P. I., Bikhunov, A. Z., Surasino, O. G., Kazakova, L. P., Sadchikova, M. P., Shcherbova, E. A., Markova, I. M., Kiriva, V. V., Kudrina, H. P., Sizov, G.

TITLE: "The Solubility of Oil Hydrocarbons in Organic Solvents and Ways of the Oil Production Improvement.

PERIODICAL: *Tr. Vosh. in-t neftekhim. i gaz. prom-sti*, 1959, No. 2¹, pp. 311-310

TEXT: The authors recommend ways of improvement of the lubricant production. Hydrocarbons of higher molecular weight and higher freezing point are in the first place separated at the fractional crystallization of oil hydrocarbons from their solution in acetone. The solubility of the naphtene and paraffin fractions of oils as well as the solubility of a part of the aromatic hydrocarbons and resins result from the effect of the dispersion forces, and the solubility of the remaining part of aromatic hydrocarbons and resins is connected with the action of polar forces. The increase of the dissolving power of the solvent is a consequence of the increase of both its dipole moment and the non-polar portion

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0005/000

The Solubility of Oil Hydrocarbons in Organic Solvents and Type of the Oil
Fraction Improvement

of its molecule. In both cases, the increase of the dissolving power of the
solvent is accompanied with the decrease of its selectivity. There are considered:
the mechanism of the de-sulfurizing of a petroleum concentrate by benzene; the
effects of temperature and quantity of sulfurole on the course of refining of
the oil distillate of the heavy petroleum; the properties of phenol and tur-
pentine. An increase in the quantity of sulfurole in the refining makes up the
resistance of its dispersion properties; whereas, the quantity of organic
hydrocarbons liable to be extracted thereby increases, as a result of which the
viscosity coefficient of the refined product increases more than at increased
refining temperature. In the use of phenol, the output of refined products is
lower than for the refining by sulfurole in consequence of the higher dissolving
power of the former. The high dissolving power of phenol leads to over-refining
of oils in consequence of which their resistance to oxidation decreases. By the
addition of water to phenol, its dissolving power decreases, and the selection
properties and the output of refined products increase, whereas its viscosity
coefficient considerably decreases. The treatment of a transformer oil distil-

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