

85890

9.2180 (3203,1162)
24.7800 (1144 only)

S/048/60/024/011/026/036
B006/B060

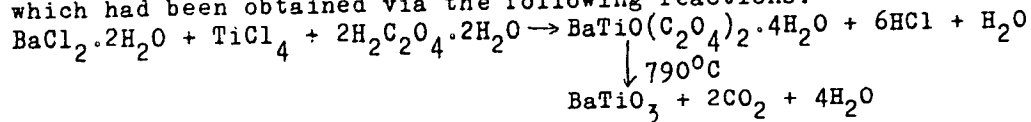
AUTHORS: Anan'yeva, A. A., Ugrumova, M. A., and Strizhkov, B. V.

TITLE: Some Anomalous Properties of Chemically Pure Barium Titanate
Ceramics ¹

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,
Vol. 24, No. 11, pp. 1401 - 1404

TEXT: This is the reproduction of a lecture delivered at the Third Con-
ference on Ferroelectricity which took place in Moscow from January 25 to
30, 1960. The authors studied the properties of high-purity BaTiO₃ ceramics ✓

which had been obtained via the following reactions:



The reactions and respective results were studied by thermographic, X-ray,
and chemical analyses. The specimens obtained were submitted to heat treat-
ment at 900 - 1450°C. In these specimens, ε was measured as a function of
Card 1/2

85890

Some Anomalous Properties of Chemically Pure
Barium Titanate Ceramics

S/048/60/024/011/026/036
B006/B060

the heat treatment temperature and the curve obtained was compared with that taken from technically pure BaTiO_3 . While the ϵ of high-purity BaTiO_3 specimens attains a maximum (6000) at a temperature of 1240°C , and then drops to a constant value of 2300. the ϵ -value of technically pure specimens remains below 1500. Fig. 2 shows ϵ as a function of the duration of the heat treatment at 1270 and 1350°C (high purity) and 1350°C (technological). Only in the former case does ϵ decrease with time, while remaining constant in the two latter cases. Fig. 3 illustrates the dependence of density, porosity, and water uptake of the specimens on the heat treatment temperature. The sharpest changes were observed at 1240°C . At this temperature, density attains its maximum (5.94 g/cm^3) and conserves it; porosity and water uptake are practically nil. Fig. 4 shows micro-pictures of sections of the individual specimens undergoing a heat treatment at various temperatures. The grain size was found to be highly temperature-dependent. There are 4 figures and 5 non-Soviet references. ✓

Card 2/2

85891

9.2181 (2303, 3203)
24.7800 (1144, 1162)

S/048/60/024/011/027/036
B006/B060

AUTHORS: Anan'yeva, A. A. Strizhkov, B. V. Ugryumova, M. A.

TITLE: Dielectric and Piezoelectric Properties of Chemically Pure Barium Titanate Ceramics

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 11, pp. 1405 - 1408

TEXT: This is the reproduction of a lecture delivered at the Third Conference on Ferroelectricity which took place in Moscow from January 25 to 30, 1960. N. S. Novosiltsev, A. L. Khodakov, and the authors of this paper examined polycrystalline specimens of chemically pure barium titanate and determined the dependence of the electrophysical properties on the heat treatment temperature. A report is made here of the dielectric, elastic, and piezoelectric properties of chemically pure $BaTiO_3$. The heat treatments were made at 1180, 1240, 1270, and 1400°C (specimens 1 - 4), and also commercially pure specimens (No. 5) were examined for a comparison (1380°C). Investigation results are given in diagrams and tables. Fig. 1 shows the temperature dependence of the various specimens 1 - 5, the peak
Card 1/3

Dielectric and Piezoelectric Properties of
Chemically Pure Barium Titanate Ceramics

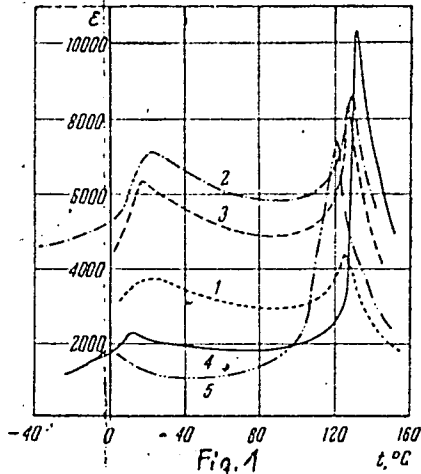
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S/048/60/024/011/027/036
B006/B060

values being tabulated. Fig. 2 shows $\epsilon(t)$ for polarized and nonpolarized coarse-grained chemically pure BaTiO_3 specimens; the two ϵ -peaks (1st and 2nd phase transition) are well marked and are somewhat higher for the polarized specimen. The acoustic velocity c was determined in pure BaTiO_3 ceramics on the basis of the radial vibrations of polarized specimens. Fig. 3 shows its temperature dependence; c rises rapidly with temperature and remains practically constant from 1300°C on. Fig. 4 illustrates the dependence of the piezoelectric modulus d_{31} on the heat treatment temperature. For chemically pure BaTiO_3 ceramics, d_{31} is about 1.5 times as high as for commercially pure BaTiO_3 . Specimens submitted to heat treatment below 1250°C exhibited very high d_{31} values; thus, e.g., the specimen treated at 1170°C had a $d_{31} \sim 5 \cdot 10^{-6}$ CGSE. There are 4 figures, 2 tables, and 4 references: 3 Soviet and 1 US

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Legend to the Table: 1) temperature of heat treatment, 2) commercial ceramics (1380°C), 3) temperature of first phase transition, 4) temperature of second phase transition; ϵ_k^1 peak value at first phase transition, ϵ_k^2 peak value at second phase transition, ϵ_0 minimum value.

Температура обжига, °C 1	ϵ_k^1	ϵ_k^2	ϵ_0	$\frac{\epsilon_k^1}{\epsilon_0}$	$\frac{\epsilon_k^2}{\epsilon_0}$	Температура 1-го фазового перехода, °C 3	Температура 2-го фазового перехода, °C 4	tg δ при 20°	tg δ при 80°
1180	4500	3750	3100	1,45	1,21	126	25	0,059	0,03
1240	8600	7300	5900	1,45	1,23	130	23	0,081	0,056
1270	8300	6400	5000	1,66	1,28	127	20	0,055	0,033
1400	10300	2400	1750	5,95	1,37	132	12	0,01	0,028
Техническая керамика, 1350	7400	1900	1200	6,16	1,58	123	0	0,02	0,08

Card 3/3

53700

2209, 136, 1273

86378

S/O20/60/133/006/029/031XX

BC16/B054

AUTHORS: ~~Steinikov, B. V.~~ Lapitskiy, A. V., Vlasov, L. G., and Tsvetkov, A. I.

TITLE: Production of Titanyl Oxalates of Bivalent Metals, and a Physico-chemical Study of Their Thermal Decomposition

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6, pp. 1347-1349

TEXT: The authors report on the synthesis of the salts of titanyl oxalic acid $H_2(TiO(C_2O_4)_2) \cdot 2H_2O$ with bivalent cations, and on the physico-chemical study of the decomposition of these salts on heating. For this purpose, the authors developed special methods, and produced, with their aid, barium-, strontium-, lead-, and calcium-titanyl oxalates. For the first three salts, they used the following procedure: Concentrated solution of oxalic acid was added, under continuous stirring, to the aqueous solution of $TiCl_4$ (concentration 0.2-0.3 g/ml) which had been prepared by the method described in Ref. 3. Aqueous solutions of barium
Card 1/3

86378

Production of Titanyl Oxalates of Bivalent Metals, and a Physico-chemical Study of Their Thermal Decomposition S/020/60/133/006/029/031XX
BO16/BO54

chloride, strontium chloride, or lead nitrate were added to the resulting solution of titanyl oxalate at room temperature. The resulting complex salts yielded a white precipitate. Calcium-titanyl oxalate could only be obtained in acetic solution. An analysis of the compounds produced showed the following compositions: $\text{BaTiO}(\text{C}_2\text{O}_4)_2 \cdot 4\text{H}_2\text{O}$; $\text{SrTiO}(\text{C}_2\text{O}_4)_2 \cdot 5.5\text{H}_2\text{O}$; $\text{PbTiO}(\text{C}_2\text{O}_4)_3 \cdot 4\text{H}_2\text{O}$, and $\text{CaTiO}(\text{C}_2\text{O}_4)_2 \cdot 5\text{H}_2\text{O}$. By an X-ray phase analysis and a crystal-optical investigation, the authors proved that the complex salts obtained consist of small isotropic crystals. A comprehensive thermographic and thermogravimetric investigation showed that the thermal decomposition of the said four titanyl oxalates proceeds by steps, and is accompanied by several endo- and exothermic processes (Fig. 1). From the character of decomposition, the authors conclude that the oxalate groups are mainly bound to the titanyl ion; the cation has no noticeable effect on the strength of this bond. The process of thermal decomposition is concluded at about 800°C . The end products are meta-titanates of the corresponding metals. Table 1 gives the specific gravities of the salts used and of the products of thermal decomposition. As was expected, the

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Production of Titanyl Oxalates of Bivalent S/020/60/133/006/029/031XX
Metals, and a Physico-chemical Study of Their BC16/BC54
Thermal Decomposition

specific gravity increases with rising roasting temperature up to a maximum which corresponds to the specific gravities of barium-, strontium-, calcium-, and lead titanate, respectively. There are 1 figure, 1 table, and 3 non-Soviet references. ✓

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: April 7, 1960, by I. I. Chernyayev, Academician

SUBMITTED: April 4, 1960

Card 3/3

83975

S/080/60/033/009/007/021
A003/A001

54700

AUTHORS: Strizhkov, B.V., Lapitskiy, A.V., Vlasov, L.G.

TITLE: The Physical-Chemical Study of the Decomposition of the Barium
Titanyl Oxalate Binary Salt

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 9, pp. 2009-2014

TEXT: $BaTiO(C_2O_4) \cdot 4H_2O$ and the products of its thermal decomposition were investigated. It was subjected to complex thermographic and thermogravitation analysis within the temperature range from 20 to 1,400°C. The investigation was carried out in the Gosudarstvennyy issledovatel'skiy elektrokeramicheskiy institut (State Electroceramic Research Institute) on a Voronkov's apparatus (Ref. 4). The weight of the batch was 0.15 g. The temperature was raised at the rate of 8 degrees/min. The first endothermic process was observed at 175°C and was accompanied by a weight loss of 16.7% corresponding to a loss of 4 molecules of crystallization water. The second process took place at 345°C. It was accompanied by a weight loss of 20% due to the decomposition of the oxalate ion and liberation of two molecules of carbon dioxide. The third effect, at 670°C, was due to the liberation of another two molecules of carbon dioxide resulting

Card 1/2

STRIZHKOV, B.V.; LAPITSKIY, A.V.; VLASOV, L.G.; TSVETKOV, A.I.

Synthesis of titanyl oxalates of divalent metals and a physicochemical study of their thermal decomposition. Dokl.AN SSSR 133 no.6:1347-1349 Ag '60.

(MIRA 13:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova. Predstavleno akademikom I.I.Chernyyavym. (Oxalates) (Titanium compounds)

STRIZHKOV, B. V., CAND CHEM SCI, "PHYSICO-CHEMICAL
STUDY OF CERTAIN FERROELECTRICS." MOSCOW, 1961. (MIN
OF HIGHER AND SEC SPEC ED RSFSR. MOSCOW ORDER OF LENIN AND
ORDER OF LABOR RED BANNER STATE UNIV IMENI M. V. LOMONOSOV.
CHEMICAL FACULTY). (KL-DV, 11-61, 211).

STRIZHKOV, B.V.; LAFITSKIY, A.V.; VLASOV, L.G.

Preparation of calcium titanyl oxalate. Zhur. neorg. khim. 6 no.1:
238-239 '61. (MIRA 14:2)

(Calcium titanyl oxalate)

VLASOV, L.G.; LAPITSKIY, A.V.; STRIZHKOV, B.V.

Thermographic and thermogravimetric study of oxalatonibates.
Vest. Mosk. un. Ser. 2: Khim. 16 no.1:57-58 Ja-F '61.

(MIRA 14:4)

1. Kafedra radiokhimii Moskovskogo universiteta.
(Oxalatonibates)

STRIZHKOV, B.V.; LAPITSKIY, A.V.; VLASOV, L.G.

Preparation and thermographic study of barium, lead and strontium
titanyl oxalates. Zhur.prikl.khim. 34 no.3:673-674 Mr '61.

(MIRA 14:5)

(Barium titanyl oxalate) (Lead titanyl oxalate)
(Strontium titanyl oxalate)

STRIZHKOV, B.V.; LAPITSKIY, A.V.; SIMANOV, Yu.P.; VLASOV, L.G.

Complex titanium oxalates. Zhur.neorg.khim. 7 no.9:2181-2184
S '62. (MIRA 15:9)

(Titanium oxalate)

STRIZHKOV, B.V.; LAPITSKIY, A.V.; VLASOV, L.G.

Thermal decomposition of oxalic acid and bivalent metal
oxalates. Zhur.neorg.khim. 7 no..10:2352-2356 0 '62. (MIRA 15:10)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonsova i
Akusticheskiy institut AN SSSR.
(Oxalic acid) (Oxalates) (Thermochemistry)

VLASOV, L.G.; LAPITSKIY, A.V.; SALIMOV, M.A.; STRIZHKOV, B.V.

Structure of complex niobium oxalates. Zhur. neorg. khim.
7 no.11:2534-2536 N '62. (MIRA 15:12)
(Niobium compounds) (Niobium oxalate)

S/O20/62/145/005/011/020
B106/B144

AUTHORS: Vlasov, L. G., Strizhkov, B. V., Lapitskiy, A. V., and
Sallimov, M. A.

TITLE: Infrared absorption spectra of titanium and niobium oxalates

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1055-1057

TEXT: The complex nature of titanium and niobium oxalates has not hitherto been clearly explained. Therefore, the authors studied the infrared spectra of the following oxalates previously synthesized: $\text{Na}_3[\text{NbO}(\text{C}_2\text{O}_4)_3] \cdot 2\text{H}_2\text{O}$, $(\text{NH}_4)_3[\text{NbO}(\text{C}_2\text{O}_4)_3] \cdot 2\text{H}_2\text{O}$, $\text{Ca}[\text{TiO}(\text{C}_2\text{O}_4)_2] \cdot 4\text{H}_2\text{O}$, $\text{Sr}[\text{TiO}(\text{C}_2\text{O}_4)_2] \cdot 5.5\text{H}_2\text{O}$, $\text{Ba}[\text{TiO}(\text{C}_2\text{O}_4)_2] \cdot 4\text{H}_2\text{O}$. The spectra of oxalates containing Na, K, NH_4 , Ca, Sr, or Ba were taken for comparison. Titanyl and alkaline-earth metal oxalates were investigated by the powder method, the other oxalates in the form of pastes. The spectra of the simple oxalates showed one sharp absorption maximum of 900 - 750 cm^{-1} range, and two such maxima in the 1600 - 1100 cm^{-1} range. The spectra of

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S/020/62/145/005/011/020
B106/B144

Infrared absorption spectra ...

oxalates containing Ti or Nb, however, showed two and three absorption maxima, respectively, in these two ranges. According to Zh. Lekont, (Infrakrasnoye izlucheniye (Infrared radiation), M, 1958), this proves that the titanium and niobium oxalates are complex compounds. The spectra further showed that the water contained in the oxalates was crystallization water. The absence of other absorption bands in titanyl oxalates suggests that both oxalate groups are coordinatively bound to Ti. There are some more bands in Nb derivatives. Studies of the thermal stability of these oxalates showed that two of the three oxalate groups are bound more loosely, and therefore are decomposed at lower temperatures, than the third. In Ti compounds both oxalate groups are decomposed at the same time. This leads to the conclusion that in complex niobium oxalates only one oxalate group is bound coordinatively to Nb. General formulas suggested for the Ti and Nb compounds investigated: $\text{Me}^{\text{II}} [\text{TiO}(\text{C}_2\text{O}_4)_2] \cdot n\text{H}_2\text{O}$, and $\text{Me}^{\text{I}} [\text{NbO}_2\text{C}_2\text{O}_4] \cdot 2\text{Me}^{\text{I}}\text{HC}_2\text{O}_4 \cdot m\text{H}_2\text{O}$. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

Card 2/3

Infrared absorption spectra ...

S/020/62/145/005/011/020
B106/B144

PRESENTED: April 4, 1962, by I. I. Chernyayev, Academician

SUBMITTED: April.1, 1962

Card 3/3

STRIZHKOV, B.V.; LAPITSKIY, A.V.

Problem of the anomalous properties of chemically pure ceramics
of barium titanate. Vest.Mosk.un. Ser.2:Khim. 18 no.6:36-38
N-D '63. (MIRA 17:4)

1. Kafedra radiokhimii Moskovskogo universiteta.

L 39953-65 EWP(e)/EPA(s)-2/EWT(m)/EWP(w)/EWP(i)/EPF(n)-2/EWA(d)/EPA(w)-2/
T/EWP(t)/EWP(h)/EWA(c) Pab-10/Pt-10/Pu-4 IJF(c) JD/JG/KK

ACCESSION NR: A74006931 S/0080/63/036/012/2595/2600

AUTHOR: Strizhkov, B. V.; Lapitskiy, A. V.

TITLE: Physicochemical study of divalent metal niobates

SOURCE: Zhurnal prikl. khimii, v. 36, no. 12, 1963, 2595-2600

TOPIC TAGS: ceramic, ferroelectric ceramic, divalent metal metaniobate, calcium metaniobate, strontium metaniobate, barium metaniobate, lead metaniobate, metaniobate ceramic product, metaniobate preparation, hexaniobate thermal decomposition, hexaniobate thermal analysis, metaniobate thermal analysis, DTA, metaniobate ceramic property, metaniobate dielectric property, metniobate, niobate, metal niobate

ABSTRACT: A study of divalent metal niobates involved investigation into the properties of ferroelectric ceramics as well as the production of calcium, strontium, barium and lead metaniobates by synthesizing their hexaniobates by a previously developed method (V. A. Pchelkin, et al., Zhurnal Obshchey Khimii, 24, 1284,

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L 39953-65

ACCESSION NR: AP4006931

1954). Thermal decomposition of the divalent metal hexaniobates begins with a dehydration process which occurs in the form of two endothermic reactions approximately to 300C. When heated to 600-700C, the resulting exothermic reaction of the divalent metal hexaniobates does not produce any change in weight of the salts. A chemical and x-ray analysis of this process revealed that the solid phase produced by the stated reaction represents a mixture of the metaniobates and oxides of the respective divalent metals, hence that the exothermic reaction occurring at 600-700C is apparently due to the decomposition of calcium, strontium, barium and lead hexaniobates and formation of metaniobates and oxides of these metals. An investigation of the dielectric properties of calcium, strontium and barium metaniobates reveals that they usually improve with increasing calcining temperature. The investigation showed that the thermal decomposition method facilitates the production of divalent metal metaniobates at 600-700C, whereas in the case of a caking reaction, these salts can only be synthesized at about 1000C; and that the ceramics consisting of such metaniobates possess very high dielectric properties. Orig. art. has: 2 figures and 3 tables.

Card 2/3

L 39953-65

ACCESSION NR: AP4006931

ASSOCIATION: None

SUBMITTED: 15Jan62

SUB CODE: IC, MT

NO REF SOV: 004

ENCL: 00

OTHER: 002

Card 3/3 JO

STRIZHKOV, B.V.; LAPITSKIY, A.V.

Properties of metatitanates of bivalent metals prepared by the
method of thermal decomposition. Vest. Mosk. un. Ser. 2. Khim. 19
no. 1:73-76 Jan-F '64. (MIRA 17:6)

1. Kafedra radiofiziki Moskivskogo universiteta.

L 16036-65 EWP(e)/EPA(s) /EWT(m)/EFF(n)-2/EPA(w)-2/EWP(t)/EWP(b)/EWA(h) Pab-10/
Pt-10/Pu-4 IJP(c)/SSD/ASD(a)-5/AFWL/ASD(m)-3/ASM(p)-2/AFETR/ESD(gs)/
ACCESSION NR: AP4044739 ESD(t) JD/WH S/0153/64/007/003/0373/0377

AUTHORS: Strizhkov, B.V.; Lepitskiy, A. V.

TITLE: Study of the properties of solid solutions of titanates and
niobates of divalent metals B
17

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 3,
1964, 373-377

TOPIC TAGS: divalent metal titanate, divalent metal niobate, ceramic,
barium lead titanate, barium lead niobate, strontium lead niobate,
solid solution, titanyloxalate thermal decomposition, ceramic proper-
ty, density, porosity, water adsorption, x ray analysis, crystal
lattice parameter, electrophysical property, dielectric property

ABSTRACT: The properties of ceramics of divalent metal titanate and
niobate solid solutions [$(\text{Ba,Pb})\text{TiO}_3$, $(\text{Ba,Pb})\text{Nb}_2\text{O}_6$, $(\text{Sr,Pb})\text{Nb}_2\text{O}_6$]
obtained by thermal decomposition of corresponding complex compounds
were investigated. Compressed samples of a powdered solid solution
of 88 mol% Ba-12 mol% Pb titanate, obtained by thermal decomposition
of the titanyloxalate, were heated for 30 minutes at temperatures in
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L 16036-65
ACCESSION NR: AP4044739

the 1100-1350C range. The ceramic properties (specific weight, porosities, water adsorption) of the products were determined; the most dense ceramic was obtained at 1200C. X-ray analysis showed the ratio of the c/a lattice parameters decreased as the temperature was increased. A study of the electro-physical properties showed the dielectric and piezoelectric properties improved with increasing temperature. The Curie point was maximum (194C) in samples heated to 1200C; the second phase transition temperature was below -20C in all samples. Thus, in comparison to barium titanate, the Curie point was more than 60 degrees higher, while the second phase transition temperature was sharply reduced in the Ba-Pb titanate solid solution. The following solid solutions of Pb niobates with Ba and Sr niobates were prepared by thermal decomposition of the hexaniobates: 60 mol% $Pb(NbO_3)_2$ -40 $Ba(NbO_3)_2$, and 80-20 and 70-30 mol% $Pb(NbO_3)_2$ - $Sr(NbO_3)_2$. Samples were compressed and baked at temperatures in the 1100-1300C range. The ceramics fired at 1250C were the most dense. All the samples except those fired at 1100 and 1150C showed ferroelectric properties which the individual titanates did not have. The dielectric and piezoelectric properties improved with firing temperature up to 1250C; in the 1300C samples these properties were somewhat lower.

Card 2/3

L 16036-65

ACCESSION NR; AP4044739

"X-ray analysis of the solid solution of barium lead titanate, conducted by Yu. N. Venevtsev and V. V. Chkalov, at our request, indicated The authors acknowledge their help and kind attention." Orig. art. has: 4 tables and 1 equation. H

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University); Akusticheskiy institut AN SSSR Kafedra radiokhimii (Acoustical Institute AN SSSR Radiochemical Department)

SUBMITTED: 23Oct62

ENCL: 00

SUB CODE: MM,SS

NR REF SOV: 007

OTHER: 000

Card 3/3

STRIZHOV, G.F.; MYASNIKOV, P.A.

Investigating the oxidation roasting of ilmenite concentrates in
a vortex chamber. Stal' 21 no. 4:326-332 Ap '61. (MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgi-
cheskoy teplotekhniki.
(Ore dressing) (Ilmenite)

STRIZHOV, G.F.; MYASHNIKOV, F.A.; PLINER, Yu.L.

Efficient operating conditions for aluminum pulverizing equipment.
Stal' 23 no. 3:234-237 Mr '64. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy
teplotekhniki i Klyuchevskiy zavod ferrosplavov.

MYASNIKOV, P.A.; OKUNEV, A.I.; KOCHNEV, M.I.; STRIZHOV, G.F.;
VERMENICHEV, S.A.

Testing a turbulent dust-oxygen burner in a recirculation
furnace. Trudy Inst. met. UFAN SSSR no.8:5-15 '63.

(MIRA 17:9)

KOCHNEV, M.I.; OKUNEV, A.I.; MYASNIKOV, P.A.; VERMENICHEV, S.A.;
SERGIN, B.I.; STRIZHOV, G.F.

Smelting Ural copper-zinc concentrates in suspension with
an oxygen blow. Trudy Inst. met. UFAN SSSR no.8:17-31 '63.
(MIRA 17:9)

SOV/115-59-5-20/27

28(2)

AUTHOR: Strizhkov, G.M.

TITLE: Frequency Errors at Measuring Capacities with Q-meter

PERIODICAL: Izmeritel'naya Tekhnika, 1959, Nr 5, pp 45-48 (USSR)

ABSTRACT: To study the characteristics of the Q-meters KV1 and UK1, their electric arrangement has to be substituted by an equivalent (Fig.1), in which nothing but reactive elements of the measuring circuit are taken into account. For measuring capacitances, active resistances are regarded as negligible. The author presents a calculation of the absolute error at capacitance measurements (equation (3)). The data of an experiment are given. It was made to find the absolute error in an experimental way. The experiment was done with known capacitances. Condenser type KVCh-1, made by NGIMIP, were used. The author states, that the results of the theoretical and experimental investigations should serve as the basis for the establishment of accuracy standards for capacitance measuring, with the installations KV-1 and UK-1 on high and extra-high frequencies. There are 1 diagram, 4 graphs and 11 equations.

Card 1/1

9 (2)

SOV/115-59-10-16/29

AUTHORS: Strizhkov, G.M., Rabinovich, B.Ye.

TITLE: Measuring the Current With a Thermistor Bridge on Frequencies up to 1,000 mc

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 10, pp 38-40 (USSR)

ABSTRACT: The authors give a detailed description of graphical and analytical calculations for the use of a thermistor bridge for measuring the highest frequency currents (Figs 1 and 3). For this purpose the TSh-2 and TSh-3 thermistor bridges must be used, since they have the smallest by-passing capacitance and currents from 1 to 10 mil-amp. can be measured by these bridges. There are 2 diagrams, 3 graphs and 1 Soviet reference.

Card 1/1

9,2100 (1001, 1145 ONLY)
 9,2310 (2904, 1164 ONLY)

20147
 S/115/61/000/003/011/013
 B124/B204

AUTHOR: Strizhkov, G. M.

TITLE: Low-ohmic film resistors for ultrahigh frequencies

PERIODICAL: Izmeritel'naya tekhnika, no. 3, 1961, 51-53

TEXT: It was shown (Ref.1) that film resistors in the shape of thin disks exhibit low reactance; relation

$$|\bar{Z}_N| = \frac{|\bar{U}_N|}{|\bar{I}_N|} \approx R_N \left| 1 - j \cdot \frac{d^2}{30^2} - \frac{7}{90} \cdot \frac{d^4}{\delta^4} \right| \approx$$

$$\approx R_N \sqrt{1 - \frac{2}{45} \cdot \frac{d^4}{\delta^4}} \quad (1)$$

holds for the transmission impedance of a section of the coaxial lead with a metal film of thickness d attached perpendicular to the axis of the lead. Therein, \bar{U}_N, \bar{I}_N denote the voltage at the output and the current at the input of the film, respectively, R_N the d.c. resistance of the

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S/115/61/000/003/011/013
B124/B204

Low-ohmic film resistors...

film, and δ the frequency-dependent skin depth of the current. On the basis of the current distribution over the cross section of the film (Fig. 1), the equivalent scheme as shown in Fig. 2 can be established. The skin effect is taken into account by the inductance L_T which rises with film thickness. The shunting inductances may be regarded the result of parallel connection of the elementary radial bands, with the total inductance being raised due to deviation from symmetry. Symmetry means the fact that the thickness and the resistance of the film do not depend on the azimuth.

$$|\bar{U}_H| = |\bar{I}_H| \sqrt{\frac{R_H^2 + \omega^2 L_H^2}{R_H^2 + \omega^2 \left(L_H + \frac{1}{4} L_T \right)^2}} \quad (2)$$

is obtained on the assumption that the current load applied to the resistor to be examined is $I \ll I_2$, and that $R_1 = R_2 = R_H$ and $L_1 = L_2 = 2L_H$. In the case of $|\bar{I}_H| = \text{const}$, output voltage drops with rising frequency because δ decreases. This process is described in Eq. (2); if $L_T \gg L_H$ then by $|\bar{U}_H| \approx |\bar{I}_H| R_H \left[1 / \sqrt{1 + \omega^2 (L_T / 4R_H)^2} \right]$ (3). Thick and thin films without

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Low-ohmic film resistors...

asymmetry have a "decreasing" frequency characteristic, similar to that shown in Fig.3. In thin films it is difficult to secure symmetry; L_H increases considerably when the symmetry of the inductance is disturbed; at $L_H > L_T$, the output voltage rises with frequency

$|\bar{U}_H| \approx |\bar{I}_H| R_H \sqrt{1 + \omega^2 (L_H/R_H)^2} \approx |\bar{I}_H| R_H (1 + af^2)$ (4). Low-ohmic resistors are

produced by evaporating silver upon steatite; therein, control of the film thickness and obeying of the geometrical and electrical symmetry of the resistor are the most important clauses. The uniformity of film thickness was controlled by a probe with four contact needles; the maximum permissible deviation is +5%. The difference of the radii $R_o - r_o$ (Fig.1) was measured directly. The frequency characteristic of every finished resistor was measured by means of a thermistor bridge and a receiver (Fig.4). The total frequency characteristic of the resistor and of the thermistor was determined with the aid of the scheme shown in Fig.5:

$|\bar{U}_H| = R_H \sqrt{(P_T/R_{T_o})} (1 + D_o f^2) = |\bar{U}_o| (1 + D_o f^2)$ (5), where P_T denotes the power measured by the thermistor, and R_{T_o} the d.c. resistance of the thermistor; ~~X~~
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Low-ohmic film resistors...

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the correction factors Δ_1 and Δ_2 were introduced thus accounting for the frequency characteristic and the position of the thermistor at the distance l_{equ} from the resistor. Here, $\Delta_1 = -(1/2)\omega^2 R_{T_0}^2 C_{\text{sh}}^2$ (6), where C_{sh} denotes the capacity equivalent to thermistor shunting (for a TW-2B (TSh-2B)-type thermistor equal to 0.3 pf). The values of l_{equ} and of Δ_2 were calculated from the design of the thermistor head (in the present case $l_{\text{equ}} = 12$ mm). The parameter a of the frequency characteristic amounts to $a = D_0 - 2\pi^2 R_{T_0} C_{\text{sh}}^2 - 2\pi^2 \cdot (l_{\text{equ}}^2 / c^2)$ (7), where $c = 3 \cdot 10^{11}$ mm/sec. For low-ohmic resistors within the limits of R of $(0.5 - 3) \cdot 10^{-3}$ ohms, $a = (0.05 - 0.25) \cdot 10^{-6}$. The dependence of the resistance on the current passing reads as follows: $\Delta R_{\mu} = (bI^3) \%$ (8), where b amounts to about $7 \cdot 10^{-4}$ at $R_{\mu} = (1-5) \cdot 10^{-3}$ ohms. The mean value of the temperature coefficient of resistivity is 0.28% per degree. There are 5 figures and ~~X~~
Card 4/7

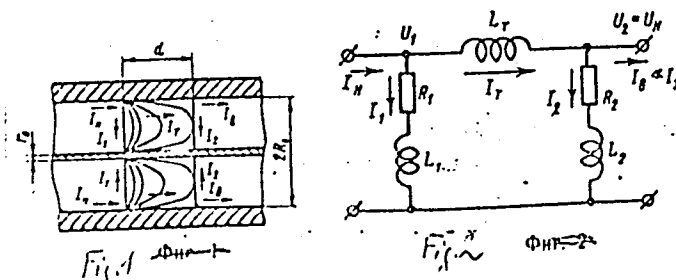
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B124/B204

Low-ohmic film resistors...

2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.



Card 5/7

STRIZHKOV, G.M.

Study of the errors of standard equipment for the reproduction of small voltages with a frequency up to 1,000 mc. Trudy inst. Kom. stand., mer i izm. prib. no.53:45-55 '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.

(Electric measurements)

STRIZHKOV, N. S., KUZNETSOV, I. G.

Outstanding excavator operator, Transp. stroi. 13 no. 4:40-41
Ap '63. (MIRA 16:4)

1. Nachal'nik Abakanskoy normativno-issledovatel'skoy stantsii
Orgtransstroya (for Strizhkov). 2. Starshiy inzhener Abakanskoy
normativno-issledovatel'skoy stantsii Orgtransstroya.

(Railroads--Earthwork)

СЕРГЕЕВ, Н.С., инж.; ГАБРИЛ, В.И., инж.; РОМАН, Е.А., инж.

Completely mechanized and finishing of the tracks on the Abakan-
Taysnet Mine. Transp. str. 1. 15 no. 11:5-6 N 165.
(MIRA 18:11)

KOPYLOV, S.Ye.; LISKOVETS, S.A.; STRIZHKOV, N.S.; TSYPLENKOV, V.D.

Stabilizing embankments by seeding them with grass after the laying of the track. Transp. stroi. 15 no.6:4-7 Je '65.

(MIRA 18:12)

1. Glavnyy tekhnolog upravleniya stroitel'stva "Abakanstroyput'" (for Kopylov).
2. Zamestitel' nachal'nika otdela puti Tsentral'nogo instituta normativnykh issledovaniy i nauchno-tekhnicheskoy informatsii v transportnom stroitel'stve (for Liskovets).
3. Nachal'nik Abakanskoy normativno-issledovatel'skoy stantsii (for Strizhkov).
4. Ispolnyayushchiy obyazannosti nachal'nika Pechorskoy normativno-issledovatel'skoy stantsii (for Tsyplenkov).

STRIZHKOV, P., glavnyy mekhanik

Mobile plant for making gypsum sawdust mastics. Na stroi. Mosk.
1 no.12:26 D '58. (MIRA 11:12)
(Wood waste) (Gypsum)

STRIZHKOV, P.; TRUKHANOVICH, S., inzh.; MOSKAYEV, P., mekhanik; ZHURAVLEV, A.,
elektrik; DUBKEVICHUS, V., s'yarshchik; NOVOZHILOV, G., slesar'

Proposals of efficiency promoters. Na stroi.Mosk. 2 no.2:28-29 P '59.
(MIRA 12:3)

1. Glavmy mekhanik stroitel'nogo uchastka-96 tresta Mosotdelstroy No.5
(for Strizhkov). 2. Stroitel'nyy uchastok-23 tresta Mosstroy No.4 (for
Trukhanovich, Moskayev, Zhuravlev, Dubkevichus). 3. Stroitel'nyy
uchastok-100 tresta Mosfundamentstroy No.3 (for Novozhilov).
(Building machinery)

1. STAIZHNIKOV, F. T.
2. USSR (600)
4. Stock and Stockbreeding
7. Organizers of collective farm stockbreeding, Sots. zhiv., 15, No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

NEYMAN, M.B.; GOLUBENKOVA, L.I.; KOVARSKAYA, B.M.; STRIZHKOVA, A.S.;
LEVANTOVSKAYA, I.I.; AKUTIN, M.S.; MOISEYEV, V.D.

Thermal degradation of condensation resins. Part 1: Thermal
degradation of epoxide resins. Vysokom.soed. 1 no.10:
1531-1537 0 '59. (MIRA 13:3)

1. Nauchno-issledovatel'skiy institut plastmass, Moskva.
(Resins, Synthetic)

SECRET

PHASE I BOOK EXPLOITATION SOV/3384

International symposium on macromolecular chemistry. Moscow, 1960.

Mashinostroeniye smpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i tezisy, Sektsiya III. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960. Papers and Summaries) Section III. [Moscow, Iza-vo AN SSSR, 1960] 469 p. 55,000 copies printed.

Tech. Ed.: P. S. Kashina.

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

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

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

Zur'yev, V. M., A. N. Pavlenko, and S. S. Medvedev (USSR). The Effect of Formic Acid and Formates on the Oxidation of Hydrocarbons and Hydrocarbon Polymers 364

Ronova, V., and D. M. Yanovskiy (USSR). Study of the Effect of Some Organic and Organoelemental Compounds on the Thermal Degradation of Polyvinyl Chloride 372

Michterle, O., Z. Sittler, and P. Cefelin (Czechoslovakia). Degradation of Poly- β -Caprolactam as a Result of Exchange Reaction Between Amide Bonds 380

Kudera, M., J. Lankoviy, and M. Zelinka (Czechoslovakia). Neutralization of Residual Catalyst in Polydimethylsiloxane. Effect of Thermal Neutralization on the Thermal Stability of the Polymer 388

Gomori, I., O. Wajsbek, and I. Sifnal (Czechoslovakia). Thermooxidative Degradation of Polymers. Study of Degradation Reactions for Different Types of Linear Polyesters 405

Meyman, M. B., B. M. Kazarkaya, L. I. Golubenkova, A. S. Strizhkov, L. Levantovskaya, and M. A. Kuzin (USSR). On the Degradation and Stabilization of Some Polymeric Materials 414

Angert, L. G., and A. S. Kuz'minskiy (USSR). Investigation of the Efficiency of Inhibitors of Rubber Oxidation at Various Temperatures 423

Ervedatskaya, I. I., and Ying Wen-K'ang (USSR). Mechanism of the Protective Action of Benzene Rings During the Radiolysis of Polystyrene 433

Zhdanov, A. A., and K. A. Andrianov (USSR). On the Hydrolytic Stability of Side Groups in Polymers with Inorganic Chains of Molecules 440

Berlin, A. A., Ye. A. Penakaya, and G. I. Volkova (USSR). Mechanism of Transformations and Block Copolymerization During the Freezing of Starch Solutions 434

Vamanor, Kh. H., B. I. Aymedzhayev, and H. Azizov (USSR). Modification of the Properties of Cellulose by Grafting 440

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B004/B056

11. 2217

AUTHORS: Neyman, M. B., Kovarskaya, B. M., Levantovskaya, I. I.,
Strizhkova, A. S., Akutin, M. S.

TITLE: Investigation of the Thermal Destruction of Condensate
Resins. The Thermal Destruction of Hardened Epoxy Resins 15

PERIODICAL: Plasticheskiye massy, 1960, No. 7, pp 17 - 20

TEXT: Following an earlier paper (Ref. 1) on the thermal destruction of ED-6 (ED-6) epoxy resin, the authors give a report on their investigation of the thermal destruction of ED-15 (ED-15) epoxy resin obtained by condensation of epichlorohydrin with diphenylpropane, as well as of ED-15 and ED-6 hardened with 7% polyethylene polyamine or with 30% maleic anhydride. They give the following experimental data: Kinetics of gas formation in the thermal destruction of ED-15 (Table 1, Fig. 1) on the basis of the chromatographical analysis by means of УХТ-2 (UKhT-2) or the Griffin apparatus (Fig. 2, chromatogram); kinetics of gas formation in ED-15 (Fig. 3) hardened with polyethylene polyamine and ED-15 hardened with maleic anhydride (Fig. 4); degree of decay of the hardened ED-6 as a

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Investigation of the Thermal Destruction of
Condensate Resins. The Thermal Destruction
of Hardened Epoxy Resins

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function of time at 345°C (Fig. 5) and as a function of temperature (Fig. 6),
as well as an electron paramagnetic spectrum (Fig. 7) that proves the
formation of free radicals. From these data the following conclusions were
drawn: Unhardened and hardened epoxy resins (low-molecular ED-6 and high-
molecular ED-15) decompose in the absence of oxygen above 200° - 250°C.
Liquid and gaseous products are formed, which in unhardened resin consist
of distilled off low-molecular fractions contained already in the initial
resin, and in hardened resin of destruction products. The destruction
products contain CO, CO₂, CH₄, C₂H₄, C₃H₈, and other hydrocarbons, as well
as saturated and unsaturated aldehydes. The mechanism of the destruction
of hardened resins is analogous to that of unhardened ED-6. In both cases,
a radical process occurs, which begins with the separation and decay of
epoxy groups. Resins hardened with maleic aldehyde form CO and CO₂ in
larger quantities as a result of the decay of the maleic aldehyde. Resin
hardened with polyethylene polyamine is more easily decomposed than such
hardened with maleic aldehyde and forms more low-molecular products. There
are 7 figures, 2 tables, and 6 references: 1 Soviet, 2 US, 2 German, and
1 Swiss
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S/020/60/135/005/027/043
B016/B052

15.8110

AUTHORS: Neyman, M. B., Kovarskaya, B. M., Strizhkova, A. S.,
Levantovskaya, I. I., and Akutin, M. S.

TITLE: The Mechanism of Thermal Destruction of Solidified Epoxy
Resins

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 5,
pp. 1147-1149

TEXT: The authors studied the kinetics of thermal destruction of epoxy resins solidified by maleic anhydride (see scheme) or polyethylene polyamine. They determined the forming radicals by the method of electron paramagnetic resonance. Fig. 1 schematically shows the results obtained from thermal processes: (1) gas separation; (2) weight losses of the residue; and (3) rate of radical accumulation. Considerable amounts of methane, carbon monoxide, formaldehyde, acetaldehyde, and acrolein were found in the gaseous products of destruction. According to the temperature, gas separation stops after 5 - 15 minutes. Thermal destruction, however, continues while liquid products of a comparatively low molecular weight

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The Mechanism of Thermal Destruction of
Solidified Epoxy Resins

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B016/B052

are distilled from the polymer. The authors suggest the following scheme for the formation of the above products: They assume that the terminal $\text{CH}_2-\overset{\text{O}}{\underset{\text{O}}{\text{C}}}-\text{CH}=\text{CH}_2$ groups are separated most easily from the polymer. This radical can be isomerized into a $\text{CH}_2-\overset{\text{O}-\text{H}}{\underset{\text{O}}{\text{C}}}-\overset{\text{O}}{\text{C}}-\dot{\text{H}}$ radical which forms acrolein and hydroxyl. The original radical may also decompose into a CH_2O molecule and a $\text{CH}_2-\overset{\text{O}}{\underset{\text{O}}{\text{C}}}-\dot{\text{H}}$ radical. By isomerization of the latter, the acetyl radical $\text{CH}_3-\overset{\text{O}}{\underset{\text{O}}{\text{C}}}-\dot{\text{H}}$ may be formed which extracts hydrogen from the epoxy resin and forms acetaldehyde. Finally, the acetyl radical may decompose into CO and CH_3 . By absorbing hydrogen, CH_3 is converted into methane. In all cases, the reaction takes place under the formation of active radicals which cannot accumulate in high concentrations and, therefore, cannot be detected by the e.p.r. method. This is only possible in later stages of the process. The authors assume that the bonds of diphenylol propane which cause the formation of stable radicals, may also be ruptured. The rupture of

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The Mechanism of Thermal Destruction of
Solidified Epoxy Resins

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phenyl-hydrogen bonds probably leads to the formation of stable radicals and semiquinone structures. The singlet signals recorded by the authors indicate the presence of long-lived radicals. From these results the authors determined the activation energies of the three above-mentioned processes. For the resin solidified by maleic anhydride, they are 30, 26, and 53 kcal/mole, respectively, and for the resin solidified by polyethylene polyamine, they are 25, 35, and 44 kcal/mole. The authors also assume that processes (1) and (2) are related to the rupture of looser bonds, while process (3) is closely connected with the rupture of tight bonds. From their experiments the authors conclude that active radicals can not easily be detected by the available e.p.r. method, while this is possible in the case of weakly active radicals. They thank Z. P. Yegorova and O. L. Lependina for their assistance in taking spectra, and E. G. Gintsberg for the polarographic determination of aldehydes. L. A. Blyumenfel'd, A. V. Topchiyev, and V. V. Voyevodskiy are mentioned. There are 4 figures and 8 references: 7 Soviet and 1 British.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut
plasticheskikh mass (State Scientific Research Institute of
Plastics)

Card 3/4

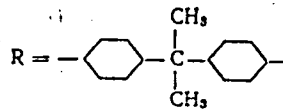
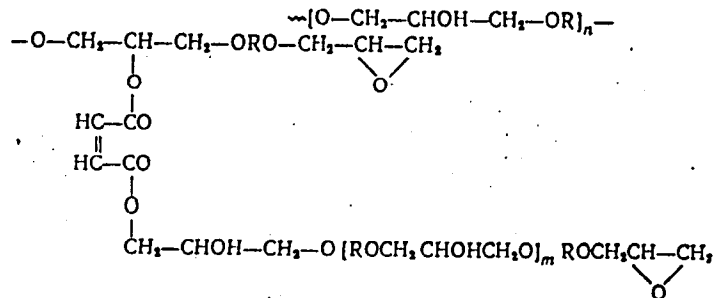
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The Mechanism of Thermal Destruction of Solidified Epoxy Resins

S/020/60/135/005/027/043
B016/B052

PRESENTED: June 29, 1960, by V. A. Kargin, Academician

SUBMITTED: June 27, 1960



Card 4/4

GINTSBERG, E.G.; KOVARSKAYA, B.M.; STRIZHKOVA, A.S.

Study of the thermal destruction of condensation resins. .Polarographic determination of aldehydes formed during the thermal destruction of epoxide resins. Plast.massy no.4:11-13 '61.
(MIRA 14:4)

(Epoxy resins)

(Formaldehyde)

3122/3101
3/100/162/004/003/01 1983

15.8110
AUTHORS:

Lovinskiy, B. M., Strizhkova, A. S., Levantovskaya, I. I.,
Chubayash, A. N., Neyman, M. B., Korshak, V. V., Vinogradov,
S. V., Valetskiy, P. M.

TITLE:

Study of the thermal degradation of condensation resins. III.
Thermal degradation of heterochain polyesters (polyarylates)

ABSTRACT:

Vysokomolekuljarnye soedineniya, v. 4, no. 3, 1962, 433-47

Thermal degradation of polyarylates on the basis of 4,4'-dihydroxydiphenyl-2,2'-propane (DPP) and terephthalic (polyarylate TD) or isophthalic (polyarylate ID) acids prepared either in a high-boiling solvent (petroleum ether) (TD(s) and ID(s), respectively) or by interfacial condensation (TD(i) and ID(i), respectively) is studied in this paper. The yield points of the polyarylates were: TD(s) ~ 340°C; TD(i) ~ 350°C; ID(s) ~ 260°C; ID(i) ~ 270°C. Thermal degradation of the mentioned polymers was investigated between 250 and 525°C. Evolution of gas sets in above 400°C, where 0.26-0.32 mole CO, 0.30-0.60 mole CO₂, and 0.06-0.13 CH₄ per mole of the polyarylate structural unit are liberated. The liquid products of thermal

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B124/B101

study of the thermal ...

degradation of TD(s) performed at 450°C show absorption bands at 1365, 1335 and 2970 cm⁻¹ characteristic of the methyl group, and at 1735 and 1250 cm⁻¹ characteristic of the ester bond. The split absorption band at 1735 cm⁻¹ indicates the presence of terephthalic acid, whereas the split band at

1600 cm⁻¹ shows free DDP to be present. The infrared spectrum of the solid residue of TD(s) after thermal degradation at 450°C for 1 hour does not contain bands which are characteristic of methyl groups, whereas bands characteristic of the ester bond are established in the infrared spectrum of the solid residue exposed to thermal degradation at 500°C for 1 hour.

These bands are lacking in the spectrum of the product exposed to thermal degradation at 600°C for 20 minutes. Absorption spectra of the solid residue of TD(s) and DDP in the region of 700 - 900 and 1600 cm⁻¹ show that the concentration of phenyl rings increases after degradation leading to the formation of polyphenylene-like structures. These conclusions were confirmed by the EMR spectra of the residues of thermal degradation of TD(s) at 450, 500, and 600°C. A. A. Berlin and L. A. Blyumenfeld's Vysokomolek. sojed., 2, 1494, 1960; Zhurnal strukturnoy khimii 1, 105,

Card 2/3

KOVARSKAYA, B.M.; SIRITSKOVA, A.S.; SHIRKOVA, Ye.L.; GINSBERG, E.G.;
MIKHAYLOVA, Z.V.; KAGANOVA, Ye.L.

Thermo-oxidative degradation of unsaturated polyesters. Plast.
massy no.3:5-7 '69. (MIRA 18:6)

BURTSEV, D.A.; STRIZHKOVA, Ye.M.

Some characteristics of and synoptic conditions for the formation
and disappearance of the snow cover in the Crimean Mountains.
Trudy UkrNIGMI no.12:110-122 '58. (MIRA 11:12)
(Crimean Mountains---Snow)

LUKASHEV, Konstantin Ignat'yevich; MALININ, Sergey Nikolayevich;
STRIZHONOK, M., red.; VOLOKHANOVICH, I., tekhn. red.

[Resources and development of the productive forces of
White Russia in the seven-year plan] Resursy i razvitie
proizvoditel'nykh sil BSSR v semiletke. Minsk, Izd-vo
Akad. nauk BSSR, 1961. 107 p. (MIRA 14:5)
(White Russia--Natural resources)
(White Russia--Economic policy)

L 27418-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JH

ACC NR: AR6009952

SOURCE CODE: UR/0137/65/000/012/G017/G017

AUTHORS: Pliner, Yu. L.; Myasnikov, P. A.; Strizhov, G. F.; Ivanov, L. A.; Shabanov, P. G.

57
B

TITLE: Increasing the efficiency of an installation for spraying aluminum

SOURCE: Ref. zh. Metallurgiya, Abs. 12G119

18 27

REF SOURCE: Sb. tr. Klyuchevsk. z-da ferrosplavov, vyp. 1, 1965, 106-111

TOPIC TAGS: aluminum, aluminum powder, atomization

ABSTRACT: A new sprayer nozzle design provides better operating characteristics with the following dimensions and condition parameters of the aluminum and sprayer: nozzle diameter - 26 mm; liquid jet diameter - 15 mm; air gap - 1.5--3.0 mm; pot temperature of Al - 710--750C; pot pressure of Al - 2.5--3.0 kg/cm²; specific air flow rate - 0.19--0.24 kg/kg; sprayer pressure - 4--5 kg/cm². With the fulfillment of the cited parameters the productivity of sprayer installations can reach 2100--2600 kg/hr, which exceeds by 45--95% the productivity of nozzles used in the factory up to 1962. The content of substandard fractions comprises 16--20%. G. Svodtseva (Translation of abstract)

SUB CODE: 11

Card 1/1 - *lg*

UDC: 669.71.4

L 43090-66 EWP(r)/EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) JH/JD

ACC NR: ARGOL4364 (A,N) SOURCE CODE: UR/0137/65/000/011/G012/G012

AUTHORS: Myasnikov, P. A.; Strizhov, G. F.; Ivanov, L. A.

66
B

TITLE: On the methodology of atomizer design employed for atomization of aluminum

SOURCE: Ref. zh. Metallurgiya, Abs. 11G81

REF SOURCE: Sb. tr. Klyuchevsk. z-da ferrosplavov, vyp. 1, 1965, 112-116

TOPIC TAGS: atomization, spray nozzle, metal powder, aluminum

ABSTRACT: In the design of atomizers (A), the following questions must be considered: 1) determination of working parameters of the metal and sprayer (S) to insure the given particle size composition of the Al powder; 2) determination of the dimensions of A. The initial data in the design of A are as follows: 1) efficiency of A in kg/g; 2) specific flow rate of S in kg/kg Al; 3) temperature of S in K; 4) pressure of S in front of A in bar; 5) pressure of metal in front of A in bar. The values for the coefficients and all equations used in the calculations are presented. 2 illustrations. V. Semakin [Translation of abstract]

SUB CODE: 11,13

UDC: 669.71.04

Card 1/1 *gd*

SOV/137-57-11-22654

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 290 (USSR)

AUTHOR: Strizhov, G. G.

TITLE: Radiation Method for the Measurement of Temperatures in the 100 to 600°C Range (Radiatsionnyy metod izmereniya temperatur v oblasti ot 100 do 600°C)

PERIODICAL: V sb.: Issledovaniya v obl. teplovykh izmereniy i priborov. Leningrad, 1957, pp 298-310

ABSTRACT: A brief exposition of a comparative method for the measurement of surface temperatures of rotating bodies by the photoelectric radiation pyrometer in the 100-600°C range. Individual preliminary results of the investigations conducted are adduced. The basis of the apparatus is laid on the idea of variable sighting for which the receiver of the radiation and the modulator have freedom of movement along the optical axis of the stationary reflector which consists of a spherical mirror with an outer coating. The receiver for the radiation is a FS-A1 type PbS photoresistance (P) with a spectroscopic sensitivity of 3.5μ . A narrow band low-frequency voltage amplifier is employed to amplify the signal. The energy flux radiated by the heated

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SOV/137 57 11 22654

Radiation Method for the Measurement of Temperatures (cont.)

surface (S) is concentrated by the reflector and, upon modulation, falls on the P, modifying the resistance of the latter. The variation in the current flowing through the P is registered by a type VKS-7 vacuum-tube voltmeter which is used in the role of the terminal instrument (TI). The apparatus is tuned up on a standard S placed at the same distance from the reflector as the S examined and possessing the same emissivity. A special arrangement permits one to regulate and measure the temperature of the standard S. By means of the alternating sighting of the instrument on the tested and the standard S, the same reading with the TI is attained through the regulation of the temperature of the standard S. In the course of that procedure the P should always be located in the image plane of the S investigated. Detocusing of the apparatus by the first 15% causes a 15% variation in the TI readings, which corresponds to a 4-6° variation in the S temperature, depending on the temperature level. It is shown that with an increase of the distance from the S investigated to the reflector the TI readings increase; however, starting with a certain distance this increase ceases owing to the increasing absorption of the radiation caused by water vapor and CO₂. The steadiness of the work of the apparatus, the temperature of the surrounding medium, and the precision in the recording of the TI reading all affect the precision of the measurement of the surface temperature. Investigations showed that the pyrometer possesses a sensitivity

Card 2/3

SOV/137-57-11-22654

Radiation Method for the Measurement of Temperatures (cont.)

of 1 - 1.5 v/degree C in measuring temperatures of the order of 100 - 200° and is sufficiently stable in its work ($\pm 2^\circ$ at 500). The small dimensions and the relative simplicity of its construction permit the employment of the apparatus under shop conditions in cases when the temperature of S cannot be measured by the contact method.

L. G

Card 3/3

KLOCHNEV, N.I., kandidat tekhnicheskikh nauk; STRIZHOV, G.S., inzhener.

Investigating residual (casting) stresses in high-strength cast iron. Metalloved. i obr.met.no.1:50-56 Ja '57. (MLRA 10:2)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya.

(Cast iron--Testing)

KOCHNEV, M.I.; OKUNEV, A.I.; MYASNIXOV, P.A.; VERMENICHEV, S.A.; SERGIN,
B.I.; STRIZHOV, G.V.

Smelting Ural copper-zinc concentrates in suspension with oxygen
blow. TSvet. met. 33 no.10:20-23 O '60. (MIRA 13:10)

1. Ural'skiy filial Akademii nauk SSSR; Ural'skiy nauchno-issledovatel'-
skiy i proyektnyy institut mednoy promyshlennosti i Vsesoyuznyy
nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki.
(Ural Mountains--Nonferrous metals--Metallurgy)
(Oxygen--Industrial applications)

STRIZHOV, Mikhail Vasil'yevich, traktorist; DMITRIYEV, N.N., red.;
SHERMUSHENKO, T.A., tekhn. red.

[For high corn yields] Za vysokii urozhai kukuruzy. Leningrad,
Lenizdat, 1961. 20 p. (MIRA 15:9)

1. Zven'yevoy sovkhoza "Petrodvortsovyy" Lomonosovskogo rayona
(for Strizhov). (Leningrad Province—Corn (Maize))

STRIZHOV, N., referent.

Planning new construction of casing joints (From: Petroleum
Engineer Je 1947). Nev.neft.tekh.:Bur.no.3:5-6 '48. (MLRA 9:4)
(Oil wells--Equipment and supplies)

STRIZHOV, N., referent.

Transfer of large-tracked unit derrick. Nov.neft.tekh.:Bur.
no.4:7 '48. (MLRA 9:4)
(Oil fields--Equipment and supplies)

VODETSKIY, Yuriy Vyacheslavovich; SHALIMOV, Ivan Fedorovich; STRIZHOV, N.I.,
redaktor; BEKMAN, Yu.K., vedushchiy redaktor; TROPIMOV, A.V.,
tekhnicheskiy redaktor

[Drilling oil and gas wells] Burenie neftiannykh i gazovykh skvazhin.
Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry,
1956. 418 p. (MIRA 9:12)
(Oil well drilling)

DANIYELYAN, Armais Avakovich; IL'SKIY, A.L., kandidat tekhnicheskoy nauk,
retsensent; STRIZHOV, N.I., redaktor; SAVINA, Z.A., vedushchiy
redaktor; POLOSINA, A.S., tekhnicheskoy redaktor

[Boring machines and mechanisms] Burovye mashiny i mekhanizmy. Moskva,
Gos.nauchno-tekhn. izd-vo neftyanoy i gorno-toplivnoy lit-ry, 1956.
439 p. (MIRA 10:1)

(Boring machinery)

UDYANSKIY, Nikolay Yakovlevich; PALAY, Polikarp Avtonomovich; TOMASHPOL'SKIY, Leonid Markovich; STRIZHOV, N.I., redaktor; BEKMAN, Yu.K., vedushchiy redaktor; MUKHINA, E.A., tekhnicheskiy redaktor

[Technique and technology of boring oil and gas wells in the sixth five-year plan] Tekhnika i tekhnologiya bureniya neftiannykh i gazovykh skvazhin v shestoi piatiletke. Moskva, Gos.nauchno-tekhn. izd-vo nefi.i gorno-toplivnoi lit-ry, 1957. 127 p. (MIRA 10:7)
(Oil well drilling) (Gas, Natural)

KALAMKAROV, Vartan Aleksandrovich; STRIZHOV, N.I., red.; ISAYEVA, V.V.,
vedushchiy red.; FEDOTOVA, I.G., tekhn.red.

[Technical progress in the petroleum and gas industries] Tekhni-
cheskii progress v neftianoi i gazovoi promyshlennosti. Moskva,
Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1960.
33 p. (MIRA 13:3)

(Petroleum industry) (Gas, Natural)

KALANKAROV, V.A.; STRIZHOV, N.I., red.; SAVINA, Z.A., ved. red.;
VORONOVA, V.V., tekhn. red.

[Development of the oil and gas industries] Razvitie neftianoi i
gazovoi promyshlennosti. Moskva, Gos.nauchno-tekhn.izd-vo neft.
i gorno-toplivnoi lit-ry, 1961. 54 p. (MIRA 15:1)
(Petroleum industry) (Gas, Natural)

SHVEDOV, V.P.; STRIZHOV, S.G.; CHIN TSZE-KHOU [Ching TSe-hou]

Preparation and some properties of potassium lanthanum selenate.
Radiokhimiia 1 no.5:622-623 '59. (MIRA 13:2)
(Potassium lanthanum selenate)

L 05138-67 EWP(m)/EWP(1)/ETI LJP(c) JD/JR
ACC NR: AP6028187 SOURCE CODE: UR/0186/66/008/003/0369/0371

AUTHOR: Shvedov, V. P.; Strizhov, S. G.; Kostikov, V. A.

35
B

ORG: none

TITLE: Phosphate¹⁷ precipitation as a method of purifying weakly radioactive waste
waters ¹⁹

SOURCE: Radiokhimiya, v. 8, no. 3, 1966, 369-371

TOPIC TAGS: water purification, phosphate, chemical precipitation, radioisotope,
radioactive waste disposal

ABSTRACT: The purpose of the study was to ascertain the applicability of the phosphate precipitation method to the deactivation of weakly radioactive waste waters of complex chemical composition and to determine the purification coefficients thus obtained. In initial experiments on the removal of ^{90}Sr alone, the method was found to be highly effective. The degree of purification increases somewhat (by 20%) when the ratio $\text{PO}_4^{3-}/\text{Ca}^{2+}$ increases from 1 to 5. The amount of Ca^{2+} ion in the mixture affects the purification, and at a ratio $\text{PO}_4^{3-}/\text{Ca}^{2+} = 3:1$, the optimum amount of Ca^{2+} is 300 mg/dm³. Phosphate precipitation was then carried out on waste waters containing $\text{Sr}^{89, 90}$, $\text{Y}^{90, 91}$, Ca^{45} , S^{35} , Ba^{133} and $\text{Cs}^{134, 137}$, at a Ca^{2+} concentration of 300 mg/dm³, $\text{PO}_4^{3-}/\text{Ca}^{2+} = 5$, and at pH = 10.2-10.4. The results were quite satisfactory. The quantities of fission products removed from the solution were: $\text{Sr}^{89, 90}$, 99.4-

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UDC: 628.34

L 05138-67

ACC NR: AP6028187

99.9%; Y⁹⁰, 91, 99.4-99.9; Ba¹³³, 96.7-99.4; Ca⁴⁵, 99.7-99.8, and S³⁵, 65%. Orig. art. ⁰
has: 3 tables.

SUB CODE: 07,18/ SUBM DATE: 20Sep65/ ORIG REF: 005/ OTH REF: 001

ms
Card 2/2

KOPYLOV, S.Ye.; LISKOVETS, S.A.; STRIZHKOV, N.S.

At the construction site of the Abakan-Tayshet line. Trans. stroi.
13 no.12:6-9 D'63 (MIRA 17:7)

1. Glavnyy tekhnolog upravleniya stroitel'stva Abakanstroypu't'
(for Kopylov).
2. Starpshiy inzh. Orgtransstroya (for Liskovets).
3. Nachal'nik Abakanskoy NIS (for Strizhkov).

SHELEKHOV, V.A.; STRIZHEKOV, V.P.

In the technical and economic committee of the Middle Ural
Economic Council. Riud. tekhn.-ekon. inform. Gos. nauch.-issl.
nauch. i tekhn. inform. 17 no.9:86-87 S 164 (MIRA 18:1)

L 18268-63

EWT(d)/BDS

ACCESSION NR: AP3006716

S/0286/63/000/008/0072/0073 54

AUTHOR: Alafinov, A. A.; Aleksandrov, V. A.; D'yachenko, V. I.; Lieberman, L. A.;
Strizhkov, Yu. G.; Shipilo, V. L.

TITLE: Machine tool for grinding the internal surface of long tubing. Class 67,
No. 154142 14

SOURCE: Byul. izobreteniy i tovarny*kh znakov, no. 8, 1963, 72-73

TOPIC TAGS: internal belt grinding machine, belt grinding, long-tube grinding,
abrasive belt, elastic bag, oval tubing, internal grinding

ABSTRACT: The patent is for a machine tool for grinding the internal surface of long tubing with a continuous abrasive belt passing through the rotating tubing. The belt is pressed against the surface being ground by an elastic element (with a pneumatic bag inside) moving reciprocally within the tubing. To provide constant pressure of the elastic element on the surface being ground when the tubing has a varying cross section, the fabric bag is placed in a leather bag with a cross-sectional perimeter larger than that of the maximum cross section of the tubing. In another model of this tool, for grinding

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L 18268-63

ACCESSION NR: AP3006716

tubing with an oval cross section, the abrasive belt is guided at the entrance of the tubing by a form roller adjustable in the direction perpendicular to the tubing axis so that rotating tubing will not catch and twist the belt. Orig. art. has: 1 figure. 0

ASSOCIATION: none

SUBMITTED: 15Jun62

DATE ACQ: 30Sep63

ENCL: 00

SUB CODE: IE

NO REF SOV: 000

OTHER: 000

Card 2/2

L 54968-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pz-4/Ps-4 WW/RM
ACCESSION NR: AP5012100 UR/0191/65/000/005/0005/0007
678.674.01:536.495:543.872

AUTHOR: Kovarskaya, B. M.; Strizhkova, A. S.; Chibisova, Ye. I.; Gintsberg, E. G.;
Mikhaylova, Z. V.; Kaganova, Ye. L.

TITLE: Thermooxidative degradation of unsaturated polyesters

34
B

SOURCE: Plasticheskiye massy, no. 5, 1965, 5-7

TOPIC TAGS: polyethylene glycol ester, maleic acid ester, succinic acid ester, phenic acid ester, polyhydrophthalate, unsaturated polyester, polyester degradation, thermooxidative degradation, styrene copolymerization, cyclohexanone peroxide, cobalt naphthenate, polyester hardening

ABSTRACT: The following polyesters were studied: polydiethylene glycol maleate succinate 1.0:0.5:0.5 (polyester I), polyethylene glycol maleate diphenate 1.0:0.5:0.5 (polyester II), and polyhydrophthalate 1.0:0.4:0.6 (polyester III). The polyesters were also hardened by copolymerization with styrene in the presence of a reducing system of cyclohexanone peroxide and cobalt naphthenate. The oxidation kinetics of the polyesters were followed by measuring the change in the gas pressure in the system. The thermal oxidation of the non-hardened polyesters is characterized by a substantial evolution of gases which begins at 130C and increases markedly with rising temperature and initial oxygen pressure.

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L 54968-65

ACCESSION NR: AP5012100

Appreciable induction periods were observed in the oxidation of the hardened and non-hardened polyester resins. Polyester III was studied in a circulation device which made it possible to freeze out the degradation products and determine the thermal oxidation kinetics only from the absorption of oxygen in the system; induction periods were observed at the end of which the reaction displayed autoacceleration. This indicated a radical-chain mechanism proceeding with degenerated branching. The oxidation of a styrene hardened solution of polyester III to which organic stabilizers had been added also indicated this mechanism. The influence of various initiators used for the hardening of unsaturated polyesters was manifested only at high temperatures (about 250C). The products of the thermal oxidation of polyester III were identified. Orig. art. has: 7 figures and 1 table. 0

ASSOCIATION: None

SUBMITTED: 00

NO REF SOV: 004

ENCL: 00

OTHER: 001

SUB CODE: CC, CC

Card

2/2

BUYANOVSKIY, N.I.; KARAYEV, A.K.; KULIYEV, S.M.; MUSTAMBEKOV, T.F.;
STRIZHOV, N.I.; TIMOFEYEV, N.S.; SHATSOV, N.I.

Technical progress in the drilling of oil and gas wells over
the last one hundred years. Neft. khoz. 42 no.9/10:99-106
S-0 '64. (MIRA 17:10)

STRIZHOVA, A I

BULATOVA, Z.I.; VOYTSEL', Z.A.; GORBOVETS, A.N.; IVANOVA, Ye.A.; KAZ'MINA, T.A.; KISEL'MAN, E.N.; KLIMKO, S.A.; KLIMOVA, I.G.; KOZYREVA, V.F.; KORNEVA, F.R.; KOSTITSINA, R.P.; KRUGLOVA, Z.M.; STRIZHOVA, A.I.; MARKOVA, L.G.; TARASOVA, A.S.; USHAKOVA, M.V.; FILIPPOVA, Ye.A., ved.red.; TROFIMOV, A.V., tekhn.red.

[Mesozoic and Cenozoic stratigraphy of the West Siberian Lowland]
Stratigrafiia mezozoiia i kainozoiia Zapadno-Sibirskoi nizmennosti.
Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry,
1957. 147 p. (MIRA 12:2)

1. Gosudarstvennyy soyuznyy Zapadno-Sibirskiy nefterazvedochnyy trest.

(Siberia, Western--Geology, Stratigraphic)

L 14507-65 EPA(s)-2/EMT(m)/EPF(c)/EPR/ENP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 ASD(m)-3/
ASD(p)-3/KFTC(a)/RAEM(1) WI/RM S/0191/64/000/011/0015/0016
ACCESSION NR: AP4048202

AUTHOR: Strizhkova, A. S., Kovarskaya, B. M., Neyman, M. B. B

TITLE: Thermooxidative degradation of polyacrylic ester ¹⁶

SOURCE: *Plasticheskiye massy**, no. 11, 1964, 15-16

TOPIC TAGS: polyacrylic ester, thermooxidative degradation, antioxidant, stabilizer, polymer autooxidation

ABSTRACT: The authors studied the thermooxidative degradation of the simplest polyacrylic ester, TGM-3. The purified ester, in powder form, was polymerized in the presence of 1% benzoyl peroxide at 100-110C for 30 minutes after which the oxidative degradation was followed using the static apparatus described earlier. The degree of degradation was established on the basis of the decrease in oxygen pressure in the system. The kinetic curves showed characteristic induction periods, during which the oxidation proceeds very slowly and the oxygen pressure remains almost unchanged. The relationship between the induction period τ and the oxygen pressure at 90, 100 and 110C shows that the induction period decreases with increasing pressure and temperature. A plot of the induction period against temperature shows that polyacrylic ester is insufficiently heat-stable in the presence of oxygen; at 110C its oxidation starts after 10 min. The

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L 14507-65

ACCESSION NR: AP4048202

presence of an induction period reveals the autocatalytic character of this thermooxidative reaction. The kinetics of the accumulation of hydroperoxides during the oxidation of polyacrylic ester was studied by the iodometric method at 130C ($P_{O_2} = 200$ mm Hg); here, the maximum peroxide concentration corresponds to the maximum oxidation rate. It can be concluded that the oxidation of polyacrylic ester proceeds as a chain reaction with the formation of hydroperoxide, the decomposition of which leads to degenerated branching, which explains the autooxidative characters of the process. The effect of different stabilizers was also investigated. The kinetic curves showing the oxygen absorption of polyester resins stabilized with different inhibitors at 150C and at an initial oxygen pressure of 550 mm Hg are given. It was found that the most effective stabilizer was di- β -naphthyl-p-phenylenediamine. The rate of oxidation with this antioxidant was slight and the sample stabilized with it absorbed several times less oxygen in 2 hours than the unstabilized sample. Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 004

OTHER: 000

Card 2/2

STRIZHOV, V.P.; SHELEKHOV, V.A.

In the technical and economic council of the Middle Ural Economic
Council. *Bul.tekh.ekon.inform.Gos.nauch.-issl.inst.nauch.i tekhn.*
inform. 1' no.10:89-90 0-162. (MIRA 18:4)

MIZEROV, B.V.; STRIZHOVA, A.I.

Basic characteristics of paleogeography in the Ket'-Tym portion
of the Ob' valley in the Quaternary. Trudy Inst. geol. i geofiz.
Sib. otd. AN SSSR no.44:196-216 '64.

(MIRA 17:11)

KRUPENIKOV, I.A., kand. geologo-mineral. nauk; RODINA, A.K.; STRIZHOVA,
G.P.; URSU, A.F.

Chernozems of the northern half of Moldavia. Izv. Mold. fil.
AN SSSR no.7:3-23 '61 (MIRA 17:7)

СТРИЖОВА СЛАВА НИ
USSR/Pharmacology. Toxicology. Cardio-Vascular Drugs. V-5.

Abs Jour : Ref Zhur-Biol., No 6, 1958, 28081.

Author : Strizhova-Salova N. I.

Inst : Not given.

Title : On the Pharmacology of the Scorpion Plant--a New Cardiac Drug.

Orig Pub : Farmakol. i toksikologiya, 1957, 20, No 3, 59-63

Abstract : Experiments on frogs, cats, rabbits, and white mice as well as on an isolated heart were conducted with a 10% alcohol infusion prepared from the seeds of the scorpion plant, *Coronilla scorpioides* (L). It increased blood pressure, increased the amplitude of the pulse fluctuations, slowed the rhythm and produced changes of the electrocar-

Card 1/2

STRIZHOVA-SALOVA, H.I., kand.med.nauk, (Kiyev)

Effect of novocaine therapy on some indicators of detoxication
processes in elderly and senile people. Vrach. delo no.9:
138-139 9 53. (MIRA 16:10)

1. Laboratoriya eksperimental'noy terapii (zav. - doktor med.
nauk S.I.Baluyev) Instituta gerontologii i eksperimental'noy
patologii AMN SSSR.
(NOVOCAINE) (TOXINS AND ANTITOXINS)
(GERIATRICS)

STRIZHOVA-SALOVA, N.I.

Effect of strophanthine on the heart of old animals. Vop. geron. i
geriat. 4:141-146 '65. (MIRA 18:5)

1. Institut gerontologii AMN SSSR, Kiyev.

STRIZHOVSKIY, A.D.

Some kinetic regularities of erythropoiesis. *Biul. eksp. biol.* 1
med. 54 no. 11:102-105 N '62. (MIRA 15:12)

1. Nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR A.V.
Lebedinskiy. Predstavlena deystvitel'nym chlenom AMN SSSR
A.V. Lebedinskim.

(ERYTHROPOIESIS)

Ch. 116. STRIZOVA, Sylvie

C-1, Dwyer, Pure & Applied

2618. Application of the Grote-Krekeler apparatus to determination of sulphur in fuels and ores. K. Parton and S. Strizova (Paliva, 1950, 30, 73-76).--The Grote-Krekeler method (cf. B., 1933, 290) gives low results for sulphite ores containing Ca, Mn, or Mg carbonates. owing to non-decomp. of sulphates formed at 1000°. A working temp. of 1450° is recommended. R. Truscove.