

SOV/70-4-1-12/26

The Growing of Crystals of Triglycine Sulphate and Their Physical Properties

- $d_{21} = 70.7 \pm 0.1 \times 10^{-8}$  c.g.s.u.
- $d_{22} = 23.8 \pm 0.5$
- $d_{23} = 76.0 \pm 0.1$
- $d_{25} = 73.0 \pm 0.3$
- $d_{14} = +8.3 \pm 0.1 \times 10^{-8}$  c.g.s.u.
- $d_{36} = 8.5 \pm 0.1$
- $d_{34} = -9.6 \pm 0.5$
- $d_{16} = -13.7 \pm 0.2$

There were considerable differences from specimen to specimen amounting, for Y-cut crystals, to 15-20%. The elastic moduli were found by an ultrasonic pulse method from a set of six plates with an accuracy of 1-2%. They are:

- $c_{11} = 4.55 \times 10^{11}$  dynes/cm<sup>2</sup>
- $c_{22} = 3.21$
- $c_{33} = 2.63$
- $c_{44} = 0.95$
- $c_{55} = 1.11$
- $c_{31} = 1.98$
- $c_{12} = 1.72$
- $c_{15} = -0.30$
- $c_{25} = -0.036$
- $c_{35} = -0.5$

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The Growing of Crystals of Triglycine Sulphate and Their Physical Properties

$$c_{66} = 0.62$$

$$c_{46} = -0.026$$

$$c_{23} = 2.08$$

Acknowledgments are made to Academician A.V. Shubnikov and I.S. Zheluzov for their advice and to Ye.M. Akulenok for help with experiments.

There are 5 figures, 1 table and 6 references, 3 of which are Soviet, 1 English, 1 German and 1 international.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc.USSR)

SUBMITTED: June 17, 1958

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SOV/70-4-1-25/26

AUTHORS: Konstantinova, V.P., Sil'vestrova, I.M. and  
Yurin, V.A.

TITLE: Twinning and the Dielectric Properties of a Crystal of  
Triglycine Sulphate (Dvoynikovaniye i dielektricheskiye  
svoystva kristalla triglitsinsul'fata)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 1, pp 125-129 (USSR)

ABSTRACT: The Y-axis in  $(\text{NH}_2\text{CH}_2\text{COOH})_3 \cdot \text{H}_2\text{SO}_4$  is the direction of  
ferroelectric polarisation and plates cut perpendicular  
to this axis were examined here. Etching these plates  
showed the twin structure with individuals from tenths  
of a millimetre to several centimetres. The faces at  
the two ends of the polar axis are etched differently,  
one kind of etching giving a matte effect and the axes  
of the individuals are parallel or anti-parallel to the  
plate normals. This observation is confirmed by the  
complementary patterns observed on two sides of the plate.  
The hysteresis loop (dielectric hysteresis) of the plate  
was studied between  $-80$  and  $+53$  °C. The spontaneous  
polarisation at  $23$  °C is  $2.02 \times 10^{-6}$  coul/cm<sup>2</sup>. The

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Twinning and the Dielectric Properties of a Crystal of Triglycine Sulphate

coercivity for most specimens lay between 200 and 300 V/cm, but some were <sup>from</sup> 90 to 1 000 V/cm. The dielectric constant was measured at various frequencies, temperatures and field strengths;  $\epsilon_{22}$  shows a sharp dielectric anomaly ( $\lambda$ -point) at 49.2-49.6 °C and  $\epsilon_{11}$  also shows a small peak at this temperature but  $\epsilon_{33}$  does not. The spontaneous polarisation falls to zero at about 52 °C. Acknowledgments are made to Academician A.V. Shubnikov and I.S. Zheludev for their advice. There are 9 figures and 1 English reference.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc., USSR)

SUBMITTED: June 17, 1958

Card 2/2



9.2180

84999

S/048/60/024/010/008/033  
B013/B063

AUTHORS: Konstantinova, V. P., Sil'vestrova, I. M., Shuvalov, L.A., and Yurin, V. A.

TITLE: Production and Piezoelectric Properties<sup>1</sup> of Crystals of Deuterized Triglycin Sulfate

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 10, pp. 1203-1205

TEXT: Monocrystals of deuterized triglycin sulfate (DTGS) were obtained from monocrystals of ordinary triglycin sulfate (TGS) dissolved in D<sub>2</sub>O. The solution was boiled, whereupon large DTGS monocrystals with a weight of up to 100 g were bred from it. The external form of the DTGS crystals is the same as in TGS crystals. In their symmetry they belong, like TGS crystals, to the monocline system. The form of the domain boundaries in DTGS crystals is shown in Fig. 1. Measurements have shown that the dependencies of all of the characteristics of reversion of polarization on temperature, on the field, on the frequency, and other quantities (Figs. 2-5) in DTGS crystals exhibit a qualitative similarity with the

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84999

S/048/60/024/010/008/033  
B013/B063  
CIA-RDP86-00513R00082441002

Production and Piezoelectric Properties of Crystals of Deuterized Triglycin Sulfate

corresponding dependencies of TGS crystals. Fig. 6 illustrates the relations  $i_{max}/S = f(E)$  and  $1/\tau_{max} = f(E)$ , taken at different temperatures. (S - electrode area, E - field strength during the pulse). Fig. 7 gives the temperature dependence of mobility  $\mu$ , as calculated from formula

$$\mu = \frac{d}{\tau_{max}(E - E_a)}$$

(d - thickness of plate, E<sub>a</sub> - activation field).

Owing to the fact that DTGS crystals, compared with TGS crystals, are usable within a much wider temperature range, and that their characteristics at room temperature exhibit a lesser temperature dependence, they can be used in the same cases as the TGS crystals in spite of their considerable electrical hardness. The authors thank I. S. Zheludev for his discussion of results, and Ye. M. Akulenok, K. A. Pluzhnikov, and L. N. Kurnakovskaya for assistance given in the experiments. The present paper was read at the Third Conference on Piezoelectricity which took place in Moscow from January 25 to 30, 1960. There are 7 figures and 8 references: 5 Soviet.

ASSOCIATION: Institut kristallografii Akademii nauk SSSR  
(Institute of Crystallography of the Academy of Sciences USSR)

Card 2/2

85868

S/048/60/024/011/004/036  
B006/B056

24,7760(1043,1143,1559)

AUTHORS: Konstantinova, V. P., Sil'vestrova, I. M., Shuvalov, L. A.,  
and Yurin, V. A.

TITLE: Production of and Some Ferroelectric Properties of  
Lithium Hydroselenite ↗

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960  
Vol. 24, No. 11, pp. 1318 - 1323

TEXT: The present paper is a reproduction of a lecture delivered on the  
3rd Conference on Ferroelectricity, which took place in Moscow from  
January 25 to 30, 1960. Lithium hydroselenite (denoted by LHS),  
LiHSeO<sub>3</sub>·H<sub>2</sub>SeO<sub>3</sub> form monocline crystals of the space group P<sub>n</sub>. Already in  
Ref.1 it has been identified as ferroelectric, and some data were given.  
In the present paper the authors first describe the synthesis and che-  
mical properties of this compound. Fig.1 shows the solubility of LHS as  
a function of temperature (straight line), from which it may be seen  
that this crystal may be grown in the usual manner by temperature

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Production of and Some Ferroelectric  
Properties of Lithium Hydroselenite

S/048/60/024/011/004/036  
B006/B056

decrease. A monocrystal of 100 g grown by the authors is shown in Fig.2. The fusing point of LHS was found to be at 110.5°C, density -

$\rho = 3.185 \text{ g/cm}^3$ , the angle of monoclinity was  $105^\circ$ . The orientation of the crystallographic axes and the position of the main faces are shown in Fig.3. Fig.4 shows the various hysteresis loops, which are found to exist in the individual crystallographic directions of LHS. Also the direction-dependence of the dielectricity constant  $\epsilon_{33}$  (broken line) and the spontaneous polarization  $P_s$  in the cleavage face are shown. Figs.5-6 show  $\epsilon$ , the coercitive force  $E_c$  and the spontaneous polarization as a function of temperature. It was found that  $\epsilon$  and  $P_s$  increase with increasing temperature, whereas  $E_c$  decreases. Fig.7 shows  $\epsilon$  as a function of the electric field strength at various frequencies. ( $E_c$ ) in all cases has a maximum. The authors thank V. A. Frolova, L. N. Kurkovskaya, and K. A. Pluzhnikov for their collaboration and I. S. Zheludev for valuable advice. There are 7 figures, 1 table, and 5 references: 3 Soviet and 2 US.

Card 2/3



85869

S/048/60/024/011/005/036  
B006/B056

24,7300 (1043,1145,1160)

AUTHOR: Konstantinova, V. P.

TITLE: The Domain Boundaries and the Etching Patterns in Crystals of Deuterated Triglycine Sulfate ↑

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 11, pp. 1324 - 1325

TEXT: The present paper is a reproduction of a lecture delivered on the 3rd Conference on Ferroelectricity, which took place in Moscow from January 25 to 30, 1960. The paper is a continuation of previous papers (Refs. 3,4), in which the author, together with others, investigated the orientation and structure of the domain boundaries in triglycine sulfate (TGS) by etching on crystal planes parallel to (010) and (100). The author now investigated the interrelation between the domain boundaries in the ferroelectric crystals of deuterized TGS (DTGS) with cross-linked defects as well as the change in this net during the shifting of the domain boundaries, caused by the application of an electric field to the

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85869

S/048/60/024/011/005/036  
B006/B056

The Domain Boundaries and the Etching Patterns  
in Crystals of Deuterated Triglycine Sulfate

crystal. The etching patterns obtained were investigated by means of a metallographic microscope, microphotographs being made both of various forms of twin boundaries and of single-domain regions; the most interesting among them are shown here. Thus, Fig.1 shows the arrangement of the etch-furrows in three different plates of a Y-cut of a DTGS-crystal (50 and 150-fold); Fig.2 shows the shape of the twin boundaries in such plates (150- and 4-fold enlarged); Fig.3 shows shapes of domain boundaries of various parts of these plates before application of an electric field, and Fig.4 shows the same after application of a field of 900 v/cm. The duration of the field action was between 20 hours and 4 days. The field effect consisted above all in the fact that a polydomain plate was "monodomainized" by the field and that the domain boundaries vanished. In the case of part-repolarization of the sample and subsequent etching, a shifting of the domain boundaries due to field action could be observed. A comparison between Figs. 3 and 4 shows that by the action of the field elliptic domain boundaries went over into linear ones, and parallelograms were formed whose acute angles were 10°. A reversed polarity of the field led to a further "monodomainizing". The author

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S/070/62/007/005/005/014  
E132/E460

AUTHOR: ~~Konstantinova, V.P.~~

TITLE: The application of selective etching for studying the twinning and dislocation structure of triglycine-sulphate

PERIODICAL: Kristallografiya, v.7, no.5, 1962, 748-754

TEXT: The best selective etchant for triglycinesulphate was found to be acetic acid with a trace of metallic zinc and 0.7% water. Etching took 1.5 to 2 minutes. This showed up domain boundaries but the addition of 0.3 to 0.7% ethyl alcohol enabled domains of opposite sign to be distinguished and a further improvement was found with the addition of 0.2 to 0.4% nitric acid. For disclosing dislocations, glacial acetic + 1.4% water and 0.7% nitric acid was used for 5 to 10 sec. It was found that for cleavage in the cleavage plane the crack alters direction as it goes through a twin boundary; the slip step is turned through a certain angle. It is shown that where the slip steps meet a twin domain boundary the latter moves, following behind the slip step. Data on the traces of gliding in these crystals are  
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S/070/62/007/005/005/014  
E132/E460

The application of selective ...

given. There are 7 figures.

ASSOCIATION: Institut kristallografii AN SSSR  
(Institute of Crystallography AS USSR)

SUBMITTED: October 17, 1961

Card 2/2

KONSTANTINOVA, V.P.

Late outcome of gunshot fractures of bones of the forearm.  
Vest.khir. 85 no.12:48-53 D '60. (MIRA 14:1)

1. Iz kafedry operativnoy khirurgii (nach. - prof. A.N. Makai-  
menkov) Voenno-meditsinskoy ordena Lenina akademii im. S.M.  
Kirova. (GUNSHOT WOUNDS) (ARM-FRACTURE)

KONSTANTINOVA, V.P., podpolkovnik meditsinskoy sluzhby.

Necrotic enterocolitis. Voen.-med.zhur. no.6:43-45 Je '51.  
(JEJUNUM--DISEASES) (MLRA 9:9)

KONSTANTINOVA, V.P. (Leningrad, Izmaylovskiy pr., d.31, kv.34)

Late results of gunshot fractures of the humerus. Vest.khir.  
83 no.7:91-100 J1 '59. (MIRA 12:11)

1. Iz kafedry operativnoy khirurgii (nach. - prof.A.N.Maksimov)  
Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova.  
(HUMERUS--FRACTURE)

ACC ESSION NR: AR4042162

S/0196/64/000/005/B020/B020

SOURCE: Ref. zh. Elektrotehnika i energetika, Abs. 5B86

AUTHOR: Kazarnovskiy, D. M.; Konstantinova, V. P.; Feofanov, B. N.

TITLE: Nonlinear properties of triglycine sulfate

CITED SOURCE: Izv. Leningr. elektrotekhn. in-ta, vy\*p. 51, 1963, 242-251

TOPIC TAGS: triglycine sulfate, nonlinear property, ferroelectric capacitor

TRANSLATION: Experimental ferroelectric capacitors were prepared from large single crystals of triglycine sulfate  $(\text{NH}_2 \cdot \text{CH}_2 \cdot \text{COOH})_3 \text{H}_2 \text{SO}_4$  obtained from an aqueous solution by lowering the temperature from 50 to 25° C with reversible mixing. On thin plates of rectangular shape, Y-cuts of the crystal were applied by the method of evaporation of gold electrodes in a vacuum. The polar axis was the Y axis. Nonlinearity of saturation

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ACCESSION NR: AR4042162

$$N_{sat} = \frac{\epsilon_{d \cdot max}}{\epsilon_{d \cdot min}}$$

where  $\epsilon_{d \cdot max} = \left(\frac{dD}{dE}\right)$  is maximum dynamic permeability;  $\epsilon_{d \cdot min}$  is minimum dynamic permeability. Another criterion of estimating nonlinearity is integral nonlinearity

$$N_{int} = \int_0^E \left| \frac{d^2D}{dE^2} \right| dE.$$

The value of  $N_{sat}$  for BK1 is 3.3, for BK2 - 8, for triglycine sulfate - 222; value of  $N_{int}$  for BK1 is  $1.5 \cdot 10^4$ ; for BK2 -  $4.8 \cdot 10^4$ , for triglycine sulfate -  $32 \cdot 10^4$ . Thus, with different methods of estimation, triglycine sulfate has higher nonlinear properties than ceramics VK1 and VK2. The even harmonics in the chain with triglycine sulfate have linear sections and, with the known value of the displacing field, pass through the maximum. An even harmonic of current in the maximum can significantly exceed a current of basic frequency. Position and magnitude of the indicated maximum depend not only on the displacing field, but

Card 2/3



KONSTANTINOVA, V. V.

1855

Narodnoe zhilishche yuzhnogo kazakhetana. M., 1954. 16s 20sm. (Akad.  
Arkhitektury SSSR. Nauch. - issled. in-*I* istorii iteorii Arkhitektury.)  
100 Ekz. D. Tz.- (54-55130)

SO: Knizhnaya Letopis', Vol. 1, 1955

KONSTANTINOVA, V. V.

"National Dwellings of Southern Kazakhstan." Cand Arch Sci, Sci-Res Inst of  
History and Theory of Architecture, Acad Architecture USSR, Moscow, 1954. (KL, No 1,  
Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational  
SC: Sem. No 528, 29 Jul 55

L3801

S/069/62/024/006/005/009  
B101/B180

11/280  
AUTHORS:

Zakiyeva, S. Kh., Belugina, G. V., Konstantinova, V. V.,  
Rebinder, P. A.

TITLE:

Effect of the solid disperse phase content on the limiting  
viscosity of concentrated suspensions in a structured medium

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 6, 1962, 678 - 681

TEXT: The aging of a suspension of aluminum (particle size, 6 - 13 $\mu$ )  
dispersed in a purified paraffin-naphthene fraction, thickened with 2% by  
weight of aluminum naphthenate, was investigated for  $\varphi$  the solid disperse  
phase content, which ranged from 5 to 31% by volume. Measurements were  
made of  $\eta_0$  the limiting viscosity of the medium and of  $\eta_\varphi = \eta_0 \cdot K(\varphi)$  the  
limiting viscosity of the suspension, where  $K(\varphi)$  is the relative viscosity  
of the suspension dependent on  $\varphi$ . An investigation of  $\eta_0$  and  $\eta_\varphi$  as  
 $\varphi = 5 - 23\%$  showed that within 21 days the  $\eta_\varphi$ 's of suspensions with  
means that the particles of the solid disperse phase did not form any  
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KONSTANTINOVA, V.V., LIBINZON, R.Ye.

Amount and synthesis of nucleic acids in the liver in subacute  
plutonium poisoning [with summary in English]. Vop.med.khim.  
4 no.5:339-344 S-O '58 (MIRA 11:11)

(PLUTONIUM, toxicity,  
eff. on liver nucleic acids in dogs (Rus))

(LIVER, metab.  
nucleic acids, in subacute plutonium pois. in dogs  
(Rus))

(NUCLEIC ACID, metab.  
liver, in subacute plutonium pois in dogs (Rus))

KONSTANTINOVA, V.V.; LIBINZON, R.Ye.

Effect of plutonium on the amount and synthesis of nucleic acids  
in certain tissues of the rabbits. Biokhimiia 24 no.6:974-981  
H-D '59. (MIRA 13:5)

(PLUTONIUM)  
(NUCLEIC ACIDS metab.)  
(LIVER radiation eff.)  
(SPLEEN radiation eff.)

5.5300,5.1220

77941  
SOV/65-60-3-14/19

AUTHORS: Taubman, A. B., Konstantinova, V. V., Kryukova, A. S.

TITLE: Determination of the Critical Concentration of Micelle  
*Formation of Surface-Active Substances*

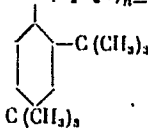
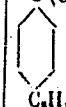
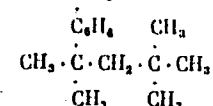
PERIODICAL: *Khimiya i tekhnologiya topliv i masel*, 1960, <sup>5</sup>№ 3,  
pp 61-66 (USSR)

ABSTRACT: Determination of critical concentration ( $C_{cr}$ ) of  
micelle formation of synthetic nonionic and anionic  
surfactants is carried out by titration of their aqueous  
solutions with a suitable dye solution. Two dyes,  
pinachanin chloride and rhodamine 6G extra, were used  
in these experiments, as well as the several surfactants  
shown in Table 1. The results of experiments are shown  
in Table 2 and compared with those obtained by conducto-  
metric and spectrophotometric methods. The suggested method  
can be used for any type of surfactants, provided a suit-  
able dye is chosen, and no special equipment is required. The

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Table 1. Surface-active Compounds.

No.	FORMULAS	MOLECULAR WEIGHT
1	$O(C_2H_4O)_{n-1}C_2H_4OH$  $n = 6$	515
2	$O(C_2H_4O)_{n-1}C_2H_4OH \quad n = 10$  $C_6H_{17}$	647
3	$C_{17}H_{35}OOC-CH_2-CH(COOC_{17}H_{35})-SO_3Na$	444
4	$SO_3Na$ 	297

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(Table 1 continued)

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NR	FORMULAS	MOLECULAR WEIGHT
5	$\begin{array}{cccc} \text{CH}_3 & \text{CH}_3 & \text{CH}_3 & \text{CH}_3 \\ \text{CH}_2 \cdot \text{C} \cdot \text{CH}_2 \cdot \text{C} \cdot \text{C}_6\text{H}_5 \cdot \text{C} \cdot \text{CH}_2 \cdot \text{C} \cdot \text{CH}_2 \\ \text{CH}_3 & \text{CH}_3\text{SO}_3\text{NaCH}_3 & & \text{CH}_3 \end{array}$	405
6	$\begin{array}{c} \text{CH}_3 \\ \text{SO}_3\text{Na} \cdot \text{C}_6\text{H}_4 \cdot \text{C} \cdot (\text{CH}_2)_7 \cdot \text{CH}_2 \\ \text{CH}_3 \end{array}$	333
7	$\begin{array}{c} \text{SO}_3\text{Na} \cdot \text{C}_6\text{H}_4 \cdot (\text{CH}_2)_2 \cdot \text{CH} \cdot (\text{CH}_2)_3 \cdot \text{CH}_2 \\ (\text{CH}_2)_2 \\ \text{CH}_3 \end{array}$	333
8	$\begin{array}{c} \text{SO}_3\text{NaC}_6\text{H}_4 \cdot \text{CH}_2 \cdot \text{CH} \cdot \text{CH}_2 \cdot \text{CH} \cdot \text{CH}_2 \\ (\text{CH}_2)_2\text{CH}_2 \\ \text{CH}_2 \cdot \text{CH}_2 \cdot \text{CH}_3 \end{array}$	345

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LIBINZON, R.Ye.; KONSTANTINOVA, V.V.

Effect of long-continued daily irradiation on nucleic acid metabolism  
in certain tissues of the rabbit. Biokhimiia 25 no.6:1018-1025  
N-D '60. (NUCLEIC ACIDS) (MIRA 14:5)  
(GAMMA RAYS---PHYSIOLOGICAL EFFECT)

S/020/60/132/02/38/067  
B004/B007

AUTHORS: Belugina, G. V., Konstantinova, V. V., Zakiyeva, S. Kh., Rebinder, P. A., Academician

TITLE: Investigation of the Gel-forming Ability of Aluminum Oleates in Benzene

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 380-383

TEXT: The authors discuss the behavior of the gels of aluminum soaps of the general composition  $Al(OH)_n(OOCR)_m$ , where  $n + m = 3$ . They mention the dependence of the properties of such substances on the number of hydroxyl groups, on the association of the molecules, and on the molecular weight and the type of acid radical. It was the aim of the present paper to investigate the behavior of the aluminum soaps of unsaturated fatty acids on the basis of the example of oleic acid. The aluminum oleates were prepared by the reaction of  $Al_2(SO_4)_3$  with an alcoholic solution of sodium oleate at  $70^{\circ}C$ . From the aluminum oleates gels were formed in pure benzene. The influence exerted by composition on the viscosity  $\eta$  was investigated on 8% gels, which were precipitated in the case of an alkali excess of 25-200%. Fig. 1 shows the dependence of  $\eta$  on the content of free alkali

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Investigation of the Gel-forming Ability of  
Aluminum Oleates in Benzene

S/020/60/132/02/38/067  
B004/B007

after 5, 7, and 30-32 days.  $\eta$  attains a maximum at 50% alkali excess ( $n = 1$ ), and a second lower maximum in the case of an alkali excess of 150% ( $n = 1.7$ ). The soap precipitated with alkali excess of 200% was no longer soluble in benzene. Like in the case of saturated fatty acids, bisubstituted aluminum soap ( $n = 1$ ) of oleic acid had the greatest viscosity. The stability of the gels was low (Fig. 2). This is ascribed to the low chemical stability of unsaturated fatty acids. However, also  $\alpha$ -naphthol added as antioxidant agent does not influence gel aging. This aging does not depend on the composition of the aluminum oleate, which fact distinguishes the Al oleates from the aluminum naphthenates (Fig. 2). Fig. 3a shows the increase of viscosity with increasing concentration of the soap. The dependence  $\log \eta = K + a \log G$  (1) was found ( $K$  and  $a =$  constants,  $C =$  concentration). Increasing concentration (Fig. 4) retards the aging process. However, also 12% gels age and are durable for not more than two weeks, whereas 4% gels of aluminum naphthenates remain stable for longer periods. There are 4 figures and 8 references, 4 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of  
Physical Chemistry of the Academy of Sciences, USSR)

SUBMITTED: February 6, 1960  
Card 2/2

17.12.20

28231  
S/581/61/000/000/002/020  
D299/D304

AUTHOR: Libinzon, R.Ye. and Konstantinova, V.V.

TITLE: The effects of prolonged daily irradiation on the nucleic acid metabolism in certain rabbit tissues

SOURCE: Lebedinskiy, A.V. and Moskalev, Yu.I., eds. Biologicheskoye deystviye radiatsii i voprosy raspredeleniya radioaktivnykh izotopov; sbornik rabot. Moscow, Gosatomizdat, 1961, 18-28

TEXT: In view of the importance of nucleic acids in the living cell, the authors made a study of nucleic acid metabolism in the most radioactivity-sensitive (bone marrow) and relatively resistant (liver) tissues of rabbits subjected to general chronic irradiation. Irradiation was carried out with Co<sup>60</sup> gamma-rays at 0.7 r/min 6 times a week with a daily dose of 30 r. The rabbits were killed off after doses of 210, 420, 630, 900, 1410, 1920 and 2490 r and the ribonucleic acid content in the tissues determined. The results X

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28231

S/581/61/000/000/002/020  
D299/D304

The effects of prolonged...

are presented in the form of arithmetical means and mean errors. No great changes in the content of ribonucleic and deoxyribonucleic acid phosphorus in the liver were noted. In the first few days of irradiation the content was reduced, but rose slightly as irradiation continued, returning to normal at a total dose of 2490 r. The synthesis of ribonucleic and deoxyribonucleic acids in the liver rose slightly at the beginning of irradiation and tapered off as radiation continued. In the bone marrow the ribonucleic acid content showed no great changes after 7 irradiations, but continued irradiation led to a marked drop. At 2490 r the ribonucleic acid content was somewhat increased. The animals survived all irradiation up to and including a total dose of 2490 r. This the authors attribute to the fact that fractionation of the radiation dose greatly reduces its biological effect. Prolonged irradiation accelerated the inclusion of  $P^{32}$  into the ribonucleic acid of both the liver and the bone marrow; this was generally accompanied by an increase in the number of dividing cells. Disturbance of the normal

Card 2/4

28231

S/581/61/000/000/002/020  
D299/D304

The effects of prolonged...

coordination between deoxyribonucleic acid synthesis and cell division led to the formation of cells containing a hyperploid quantity of deoxyribonucleic acid. From other data the authors conclude that cell division is more sensitive to radiation than in deoxyribonucleic acid synthesis. Prolonged irradiation therefore caused substantial changes in both liver and bone marrow, although the synthesis of deoxyribonucleic acid and ribonucleic acid was more inhibited in the liver. On the other hand, destructive processes were more marked in the bone marrow. This was probably due to the greater intensity of cell division in the latter. The acceleration of deoxyribonucleic acid synthesis may be due to the primary action of radiation and the products of water hydrolysis, leading to disruption of the hydrogen bonds of two interlinked chains of deoxyribonucleic acid molecules; it may also be due to the accumulation and heightened concentration of nucleic acid decomposition products. The authors regard the formation of the hyperploidal cells as a mechanism of adaptation, i.e., the appearance of cells with greater resistance to ionizing radiation. There are 4 figures, 1 table and

Card 3/4

BELUGINA, G.V.; ZAKIYEVA, S.Kh.; KONSTANTINOVA, V.V.; REBINDER, P.A.

Stabilization of concentrated suspensions by the structure formation  
of the dispersion (hydrocarbon) medium. Koll.zhur. 23 no.6:658-  
668 N-D '61. (MIRA 14:12)

1. Institut fizicheskoy khimii AN SSSR, Moskva.  
(Suspensions (Chemistry)) (Hydrocarbons)

NIKITINA, S.A.; KONSTANTINOVA, V.V.; ZAKIYEVA, S.Kh.; TAUBMAN, A.B.

Wetting capacity of surface-active substances and their rate of  
adsorption from aqueous solutions. Zhur. prikl. khim. 34 no.12:2658-  
2664 D '61. (MIRA 15:1)  
(Surface-active agents) (Adsorption)



44059

S/742/62/000/000/001/021  
I015/I215

27.1220

**AUTHORS:** Belyayev, Yu.A., Konstantinova, V.V., and Yelkina, N.I.  
**TITLE:** Distribution of plutonium in rabbits  
**SOURCE:** Plutoniy-239; raspredeleniye, biologicheskoye deystviye, uskoronnye vyvedeniya. Ed. by A.V. Izbodinskiy and Yu.I. Moskalov. Moscow, Medgiz, 1962, 7-11

**TEXT:** Most of the earlier studies on the distribution and excretion of plutonium were carried out on small laboratory animals. Present experiments were carried out on rabbits, male and female, weighing 2.5-3.0 kg. Plutonium nitrate (pH=2) was injected i.v. at doses of 2- $\mu$ Cu/kg, and the animals were sacrificed 1, 7, 14 days, and 1,3,4,5,6,9, 12 months after injection. Yu.A. Belyayev's method was used in order to determine the amount of plutonium in the bones, liver, kidneys, spleen, lungs, muscles, bone marrow and gastro-intestinal tract. The excretion from the liver where it was concentrated  
Card 1/2

27.3520  
27.1220

44061

S/742/62/000/00/003/021  
I015/I215

**AUTHORS:** Belyayev, Yu.A., Yelkina, N.I., Konstantinova, V.V.,  
and Tseveleva, I.A.

**TITLE:** The toxicologic characteristics of sodium-plutonyl-  
triacetate and its distribution in rats

**SOURCE:** Plutony-239; raspredeleniye, biologicheskoye  
deystviye, uskoreniye vyvedeniya. Ed. by A.V.  
Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz,  
1962, 19-22

**TEXT:** This plutonium salt has been studied little. Experiments  
were carried out on 260 rats and 49 control animals weighing 120-150 g.  
The doses of freshly prepared, i.p. injected plutonium salt (pH = 6.5)  
were 21, 11, 6.3, 3.3 and 1.6  $\mu\text{Cu/kg}$  b.w. Three animals from each dose  
group were sacrificed at various time-intervals after injection and

Card 1/2

27.1100  
27.1220

44058

S/742/62/000/000/010/021  
I015/I215

**AUTHOR:** Konstantinova, V.V.

**TITLE:** Effect of plutonium on urea synthesis and arginase  
activity in rats

**SOURCE:** Plutony-239; raspredeleniye, biologicheskoye  
deystviye, uskoreniye vyvedeniya. Ed. by A.V.  
Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz,  
1962, 63-65

**TEXT:** The enzyme systems involved in nitrogen metabolism  
following irradiation have been insufficiently studied. Experiments  
were carried out on female albino rats weighing 150-160 g. Plutonium  
nitrate was administered i.p. (20  $\mu\text{Cu/kg}$  b.w.). 80-90% of the animals  
died after 6 months following such a dose of Pu. The rats were deca-  
pitated after 2 and 4 months and the urea synthesis was determined on

Card 1/2

44069

8/742/62/000/000/011/021  
I015/I215

27.1100  
27.1220

AUTHOR: Konstantinova, V.V.

TITLE: The effect of plutonium on the contents and synthesis of nucleic acids in the liver of rats

SOURCE: Plutoni-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskaev. Moscow, Medgiz, 1962, 66-73

TEXT: Little data is found in the medical literature about the effect of incorporated plutonium on the nucleic acid synthesis. Experiments were carried out on 136 rats weighing 120-160 g. Plutonium<sup>239</sup> nitrate was administered i.p. at doses of 20- 6.2- 3.7- and 1.9  $\mu\text{Ci}/\text{kg}$  b.w. The animals were sacrificed by decapitation 1 and 2 weeks, and 1, 2, 6 and 12 months after the administration of Pu. A neutral  $\text{Na}_2\text{HP}^{32}$

Card 1/2

11070

S/742/62/000/000/012/021  
I015/I21527 1100  
27 1100  
AUTHORS: Libinon, H.Ye., Konstantinova, V.V.

TITLE: The effect of plutonium on the metabolism of nucleic acids in the liver and bone marrow of rabbits

SOURCE: Plutoni-239; rasprodeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz, 1962, 74-79

TEXT: This is a continuation of a previous study. Experiments were carried out on 54 rabbits, 6-8 months old. Plutonium nitrate ( $7\mu\text{Ci/kg}$  b.w., pH = 2) was injected i.v. and the animals were sacrificed 1, 3, 7 and 15 days and 1, 3, 4 $\frac{1}{2}$  and 6 months after the injection of Pu. The amount of the nucleic acids was determined in the liver and bone marrow according to Davidson's modification of the Schmidt-

Card 1/2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R00082441002

S/742/62/000/000/012/021  
I015/I215

The effect of plutonium on the metabolism...

Thannhauser's method. The concentration of phosphorus in RNA and DNA of the liver increased by 50% and 37.5%, resp. after one week, and the amount of DNA decreased by 21% after 6 months. The RNA phosphorus concentration in bone marrow was elevated during the entire period of the experiment. The DNA concentration was increased by 21% and 25% after one week and one month, resp. and decreased slightly 6 months after the injection of Pu. The mean RNA and DNA values, calculated per nucleus, increased to a maximum 4 $\frac{1}{2}$  months after the injection. A distinct increase in RNA and DNA contents of bone marrow cells was noticed on the 30th day. The specific activity of RNA in the liver increased beginning with the 3rd month and the rate of DNA synthesis increased to maximum values (7.1 times the normal) 6 months after the administration of Pu. The specific activity of RNA and DNA in bone marrow was markedly lower after one week and increased again on the 3rd month. There are 2 tables.

Card 2/2

hh071

S/742/62/000/000/013/021  
I015/I215

27.1220

AUTHORS: Libinon, R.Ye., Konstantinova, V.V.

TITLE: Tissue phosphatase activity in rats following subacute and chronic plutonium injury

SOURCE: Plutony-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu. I. Moskalev. Moscow, Medgiz, 1962, 80-85

TEXT: The effect of ionizing radiation on phosphatase activity has been extensively studied. Experiments were carried out on 61 rats weighing 120-160 g. They were injected i.p. with 20  $\mu$ ci/kg b.w. (a dose causing a subacute injury) and 6.2, 3.7 and 1.9  $\mu$ ci/kg b.w. (chronic injury) of plutonium nitrate solution. The enzyme activity

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8/742/62/000/000/013/021  
I015/I215

Tissue phosphatase activity in rats...

sa  $\frac{1}{2}$  -  $\frac{1}{4}$  in subacute and chronic injuries during the entire period  
of the experiment. There are 2 tables.

Card 3/3

ZAKIYEVA, S. Kh.; BELUGINA, G. V.; KONSTANTINOVA, V. V.;  
REBINDER, P. A.

Effect of the solid disperse phase content on the intrinsic  
viscosity of concentrated suspensions in a structured  
medium. Koll. zhur. 24 no.6:678-681 N-D '62.  
(MIRA 16:1)

1. Institut fizicheskoy khimii AN SSSR, Moskva.

(Colloids) (Viscosity) (Suspensions(Chemistry))

LIBINZON, R. Ye.; KONSTANTINOVA, V. V.; MUKSINOVA, K. N.; POPOVA, T. G.;  
ROGACHEVA, S. A.

Effectiveness of high-polymeric DNA in the treatment of  
acute radiation sickness. Radiobiologia 3 no.1:111-116  
'63. (MIRA 16:2)  
(RADIATION SICKNESS) (NUCLEIC ACIDS)



L 11235-63

EWT(1)/EWT(m)/BDS--AFFTC/AMD/ASD--AR/K

ACCESSION NR: AP3001057

S/0205/63/003/003/0336/0340

54

AUTHOR: Konstantinova, V. V.

TITLE: Physico-chemical changes in desoxyribonucleic acid under action of plutonium-239 in vivo (1)

SOURCE: Radiobiologiya, v. 3, no. 3, 1963, 336-340

TOPIC TAGS: DNA, plutonium-239, cytosine, liver, mutations

ABSTRACT: Previous investigation showed that after injection of plutonium nitrate (7 microcurie dose) into a rabbit liver the quantity of DNA decreases and the synthesis rate increases. The present study investigates disturbances caused by higher decomposition of nucleonic acids resulting from formation of qualitatively changed acids. The experimental rabbits were intravenously injected with a solution of plutonium nitrate Pu sup 239 (7 microcurie/1 kg dose). After 3 to 6 months the rabbits were killed by air embolism and preparations of DNA were extracted from their livers to determine the content of phosphorous, nitrogen, and plutonium, the nucleotidic composition, and molecular weight. Table 1 shows the molecular weight values and DNA yield in mg for 1 g moist weight of liver in experimental and control animals. Fig. 1 gives the results of DNA spectrophotometric titration. Table

Card 1/2

I. 11235-63

ACCESSION NR: AP3001057

2 summarizes the findings on phosphorous and nitrogen content in DNA preparations and nucleotidic composition in molar percentages. Investigation results show that 3 to 6 months after injecting Pu sup 239 into a rabbit liver, DNA molecular weight decreases by 31.5 to 18% and DNA yield calculated for 1 g of raw tissue is less at all times. It is also found that 6 months after plutonium injection the cytosine in DNA decreases, and this may be related to its deamination and change into uracil. In this experiment, it may be assumed that deamination of cytosine causes mutations in liver cells and may lead to a considerable loss of these cells. Orig. art. has: 1 figure, 2 tables. 0

ASSOCIATION: None

SUBMITTED: 24Apr62

DATE ACQD: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 014

OTHER: 008

ch/10/11  
Card 2/2

L 11249-63

RWP(j)/RWT(1)/RWT(m)/BDS--AFFTC/AMD/ASD--Pc-4--RM/AR/K

ACCESSION NR: AP3001074

S/0205/63/003/003/0456/0462 64

AUTHOR: Libinon, R. Ye.; Konstantinova, V. V.; Popova, T. G.; Rogacheva, S. A.

TITLE: Problem of the therapeutic action mechanism of high polymer DNA during radiation sickness /9

SOURCE: Radiobiologiya, v. 3, no. 3, 1963, 456-462

TOPIC TAGS: high polymer DNA, therapeutic action mechanism, radiation sickness

ABSTRACT: In an earlier report the effectiveness of isologous high polymer DNA preparations in treating radiation sickness was shown. The purpose of this investigation is to determine the nature of the therapeutic action mechanism by examining what happens to administered preparations in normal and irradiated animals and the effect of DNA on proliferative processes in the marrow (number of nucleus-bearing cells and mitotic index). 55 rats of both sexes were irradiated with gamma rays from a Co sup 60 source with a 1000 r dose at 20 r/min. After 24 hrs the rats were given 5-6 mg DNA of the liver or spleen in 3 ml of physiologic solution. Behavior of DNA in the organism of the rat was studied by using labeled P sup 32 preparations of DNA. Results indicate that DNA preparations taken from the spleen are more effective than DNA liver preparations. High polymer DNA in the first

Card 1/2

L 11219-63

ACCESSION NR: AP3001074

hours after administration is absorbed by liver, marrow, and spleen cells. Later it undergoes degradation and DNA synthesis takes place de novo. In normal animals the highest amount of activity connected with DNA is found in the marrow. Hematopoietic tissues of irradiated animals utilize the least amount of DNA. Higher mitotic activity and a greater number of nucleus-bearing cells are found in marrow of animals treated with DNA. Orig. art. has: 5 figures, 2 tables.

ASSOCIATION: none

SUBMITTED 11Jul62

DATE ACQD: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 003

OTHER: 006

ch/wm

Card 2/2

KONSTANTINOVA, V.V.

Deoxyribonuclease activity in the rabbit liver affected by  
plutonium. Radiobiologia 3 no.4:501-503 '63.  
(MIRA 17:2)

KONSTANTINOVA, V.V.; BELUGINA, G.V.; ZAKIYEVA, S.Kh.; REBINDER, P.A.

Effect of surface-active agents on the strength of structures of  
concentrated nonaqueous suspensions. Koll.zhur. 25 no.5:555-560  
S-0 '63. (MIRA 16:10)

1. Institut fizicheskoy khimii AN SSSR, Moskva.

KONSTANTINOVA, V.V.; ANTIPINA, E.P.

Determining the content of nickel in a nickel alloy by the volumetric method. Trudy Bash NIINP no.5:314-317 '62. (MIRA 17:10)

1. Ordena Lenina Ufimskiy neftepererabatyvayushchiy zavod.

KONSTANTINOVA, V. Ye.

KONSTANTINOVA, V. Ye.: "Air exchange in multistory buildings equipped with natural exhaust ventilation". Moscow, 1955. Academy of Architecture USSR. Sci Res Inst of Structural Engineering. (Dissertations for the degree of Candidate of Technical Science.)

SO: Knizhnaya Letopis' No. 50. 10 December 1955. Moscow.



KONSTANTINOVA, V.Ye.

Method of designing and calculating systems of natural exhaust  
ventilation. Vol. 1 san.tekhn. no.11:4-12 N '56. (MIRA 10:3)  
(Ventilation) (Reinforced concrete construction)

LIVCHAK, I.F., kandidat tekhnicheskikh nauk; KONSTANTINOVA, V.Ye.; NINEMYASH,  
D.K., redaktor izdatel'stva; GUSEVA, S.S., tekhnicheskiy redaktor

[Industrial construction elements of ventilating systems in  
apartment houses] Industrial'nye elementy ventilatsionnykh sistem  
shilykh zdaniy. Moskva, Gos.izd-vo lit-ry po stroit. i arkhit.,  
1957. 109 p. (MIRA 10:7)  
(Apartment houses - Ventilation)

KONSTANTINOVA, V.Ye.

~~Performance of natural exhaust ventilation systems in multistoried~~  
buildings. Sbor.trud.NIIST no.1:80-103 '58. (MIRA 12:1)  
(Exhaust systems)

LAMPERT, F.F., kand. med. nauk; KONSTANTINOVA, V.Ye., kand. tekhn. nauk

Hygienic evaluation of air in living quarters following the use  
of a new type of gas burner. Gig. i san. 24 no.4:15-18 Ap '59 (MIRA 12:7)

1. Iz Instituta obshchey i kommunal'noy gigiyeny imeni A.M. Sysina  
AMN SSSR i Instituta sanitarnoy tekhniki Akademii stroitel'stva i  
arkhitektury SSSR.

(AIR POLLUTION,

in houses using new type of gas burner (Rus))

(HOUSING,

air pollution in houses using new type of gas burner (Rus))

KONSTANTINOVA, V.Ye.

Additional allowances for heat losses from residential buildings.  
Vod.i san.tekh. no.1:9-13 Ja '60. (MIRA 13:4)  
(Dwellings--Heating and ventilation)

KONSTANTINOVA, V.Ye.

Experimental studies of the air in apartments supplied with gas and equipped with experimental ventilation systems. **Sbor.** trud. NIIST no.7:83-113 '61. (MIRA 15:1)  
(Dwellings--Heating and ventilation)

KONSTANTINOVA, V.Ye.

Calculation of air exchange in buildings by hydraulic analogy method.  
Vod. i san. tekhn. no.11:15-18 N '61. (MIRA 15:6)  
(Ventilation) (Hydraulic models)

LIVCHAK, I.F., doktor tekhn.nauk; SLADKOV, S.P., kand.tekhn.nauk;  
KONSTANTINOVA, V.Ye.

Improving the air in apartments using gas. Izv. ASIA 4 no.2:69-76  
'62. (MIRA 15:9)  
(Apartment houses--Heating and ventilation)



KONSTANTINOVA, Valentina Yevgen'yevna

[Calculating the air exchange in residential and public buildings] Raschet vozdukhooobmena v zhilykh i obshchestvennykh zdaniyakh. Moskva, Stroiizdat, 1964. 154 p.  
(MIRA 17:9)

KONSTANTINOV, V.Ye., kand. tekhn. nauk; SVETLOV, K.S., inzh.

Examination of systems of natural exhaust ventilation in  
multistoried buildings. Vod. i san. tekhn. no.6:10-13  
Je '65.

(MIRA 18:8)

ABOLMASOV, Anatoliy Petrovich; ~~NESTER~~ NESTER, Lev Anatol'yevich; KONSTANTINOVA,  
Ye.A., red.; NESTEROVA, T.M.; SOBOLEVSKAYA, Z.S., tekhn.red.

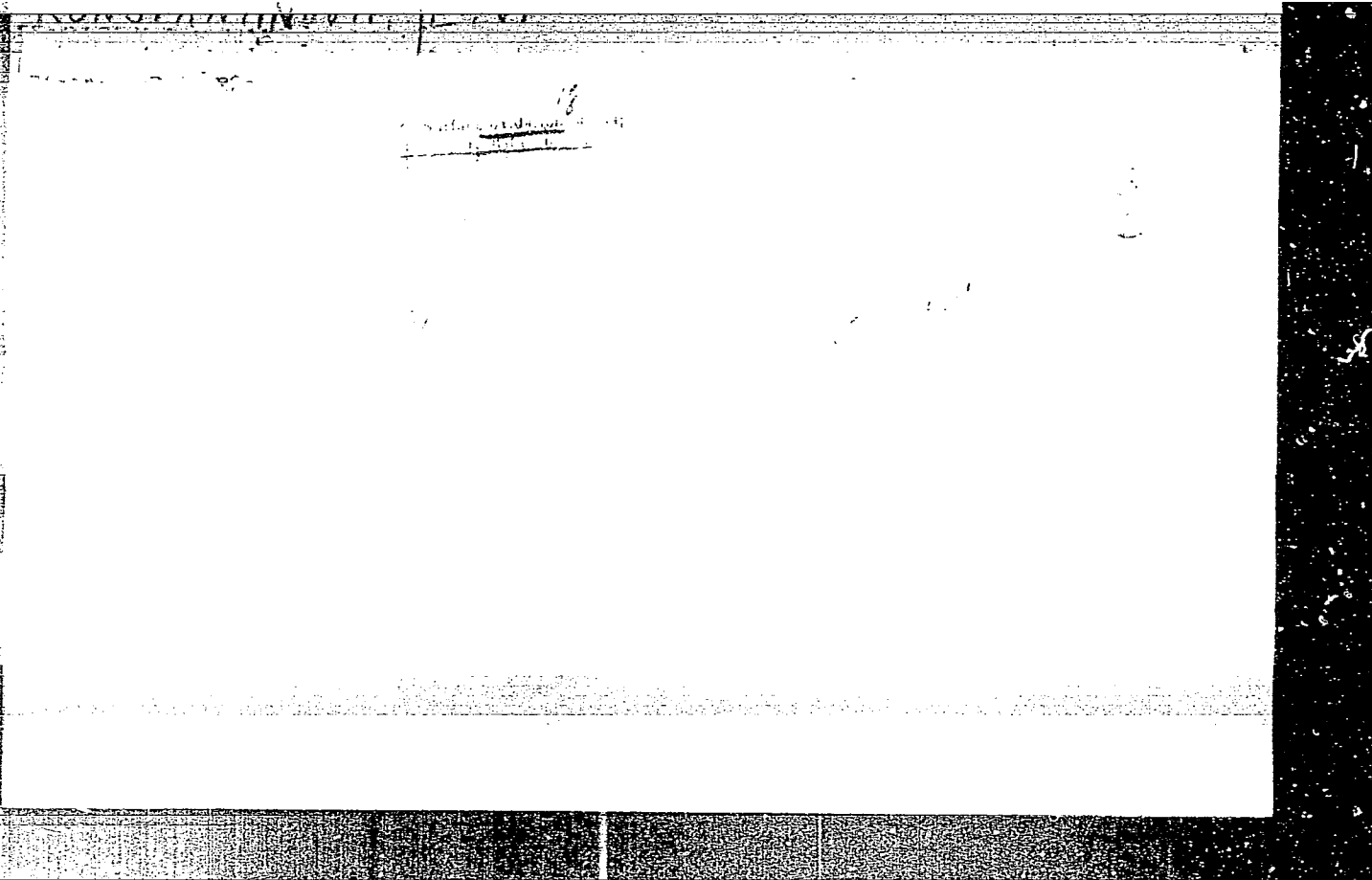
[Dictionary of Japanese geographical names; 60,000 words]  
Slovar' iaponskikh geograficheskikh nazvaniy. 60000 slov.  
Moskva, Gos.izd-vo inostr.i natsional'nykh slovari, 1959.  
577 p. (MIRA 12:11)

(Japan--Names, Geographical--Dictionaries)  
(Japanese language--Transliteration)

KONSTANTINOVA, Ye.L.;SOKOLIK, G.A.

Schroedinger's two-dimensional equation and the representations of groups of motion planes, Zhur. eksp. i teor. fiz. 30 no.2:430-431 P '56. (MLRA 9:12)

1. Fizicheskii institut imeni P. N. Lebedeva Akademii nauk SSSR.  
(Quantum theory)



18.8300,18.7100

77158  
SOV/129-60-1-6/22

AUTHOR: Konstantinova, Ye. V.

TITLE: Effects of Aging Rates on the Corrosion Resistance of Alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 1, pp 17-19 (USSR)

ABSTRACT: Al-Zn-Mg alloys are particularly susceptible to stress corrosion. A strong tendency toward stress corrosion was observed in naturally aged alloy B95 sheets (composition not given). The author investigated 1-mm-thick sheets made of two types of alloys with the following composition: (1) Cu, 1.73; Mg, 2.12; Fe, 0.04; Si, 0.05; Zn, 8.2%; and (2) Cu, 0.08; Mg, 2.14; Fe, none; Si, 0.04; Zn, 7.3%. In trying to determine the effects of aging on corrosion resistance of specimens, the author investigated the rates of aging after quenching in water from 475° C as follows: (1) at room temperature for 60 days; (2) aging for 48 hr at 50 and 100° C;

Card 1/5

Effects of Aging Rates on the Corrosion Resistance of Alloys  
APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824410020  
SOV/129-60-1-6/22

(3) aging at 120, 140, and 160° C for 60 min, 3, 8, 16, 24, and 48 hr; (4) interrupted aging (120° C and 160° C for 3 hr each); (5) aging at 200, 250, 300, 350, 400 and 450° C, for 8 hr. Stress corrosion was investigated at all five rates in a 3% NaCl solution using loop-shaped specimens. Since decomposition of solid solution during aging affects the electrical resistance of samples, it was measured and recorded together with resulting corrosion resistance of specimens for all the above rates of aging. The obtained data showed that the greater the electrical resistance of the specimen the lower its corrosion resistance. Fig. 1 shows the correlation between electrical and corrosion resistances. The regular pattern of the curves proves the interrelation between the susceptibility to corrosion cracking and the degree of decomposition of the solid solution.

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Effects of Aging Rates on the Corrosion Resistance of Alloys

77158  
SOV/129-60-1-6/22

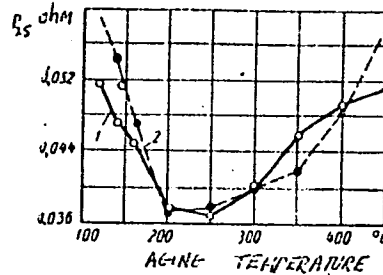
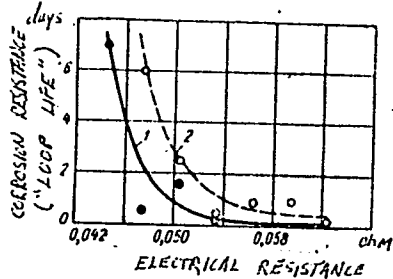


Fig. 1. Correlation between specific electrical resistance and corrosion resistance of (1) Al-Zn-Mg alloys, and (2) Al-Mg-Zn-Cu alloys.

Fig. 2. Correlation between specific electrical resistance and aging temperatures; holding time: 8 hr. (1) Al-Zn-Mg alloys, and (2) Al-Mg-Zn-Cu alloys.

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Effects of Aging Rates on the Corrosion  
Resistance of Alloys

77158  
SOV/129-60-1-6/22

The correlation between aging temperatures and specific electrical resistance is shown on Fig. 2. On the basis of the foregoing tests, the author concludes as follows: (1) Resistance to stress corrosion cracking is conditioned by the state of grain boundaries and boundary zones. (2) At the initial stage of aging, i.e., prior to decomposition of the solid solution, the electrical resistance and susceptibility to stress corrosion are most pronounced. The distortion of the crystal lattice during hardening heightens the concentration of the solid solution along grain boundaries and promotes corrosion in that area. Elevated aging temperatures lower the intensity of the above phenomena. At the same time, decomposition of the solid solution is more intense and, beginning from 160° C, can be identified microscopically as it occurs uniformly throughout the grain. (3) The quantity of decomposition products increases at maximum temperatures of 250-300° C.

Card 4/5

Inasmuch as decomposition occurs evenly and stresses are relieved, corrosion is inhibited (see Fig. 2). Above



Effects of Aging Rates on the Corrosion  
Resistance of Alloys

77158  
SOV/129-60-1-6/22

Above 300° C the diffusion of intermetallic phases results in greater concentration of the solid solution along the grain boundaries which, in turn, increases electrical resistance. Intragranular stresses caused by quenching from high temperatures also promote sensitivity to corrosion. There are 2 tables; and 3 figures.

Card 5/5

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824410020

18.8300

<sup>39ml:2</sup>  
S/081/62/000/012/030/063  
B166/B101

AUTHOR: Konstantinova, Ye. V.

TITLE: The influence of ingot homogenizing conditions on the corrosion resistance of B95 (V95) alloy sheet

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1962, 346, abstract 121138 (Sb. "Deformiruyemye alyumin. splavy". M., Oborongiz, 1961, 229-233)

TEXT: In order to ensure maximum corrosion resistance of semifinished products made from V95 alloy the ingots are homogenized at 510-520°C. It is noted that the rate of disintegration of the solid solution for an air-cooled ingot is small, and therefore the corrosion resistance is higher with a homogenizing temperature of 460°C and a holding time of 48 hours than it is with a temperature of 500°C, when the disintegration is able to develop considerably before a commensurable (as regards its influence on corrosion cracking) residual concentration of Cr in the solid solution is reached. At 520°C the influence of solubility is stronger than the influence of disintegration, and the corrosion resistance

Card 1/2

The influence of ingot ...

S/081/62/000/012/030/063  
B166/B101

is higher, even than at 460°C. [Abstracter's note: Complete translation.]

Card 2/2

188300A  
188300

21221

S/126/61/011/003/009/017  
E021/E435

AUTHOR: Konstantinova, Ye.V.

TITLE: The Relation Between Corrosion Resistance of  
Al-Mg-Zn Alloys and Their Heat Treatment

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.3,  
pp.409-419

TEXT: Corrosion tests were carried out on sheet of aluminium alloys  $\text{B}95$  (V95) 1 mm thick. The chemical compositions of the alloys tested are given in Table 1. The effect of quenching from 450, 475 and 500°C on corrosion resistance was studied. The effect of various ageing treatments was also tried: 24 h at 120°C; 8, 12 and 16 h at 140°C; a 'stepped' treatment (3 h at 120°C, 3 h at 160°C); and natural ageing (60 days). Corrosion tests were carried out both on sheets clad with Al-1%Zn alloy and on unclad sheets. Samples were tested in a moisture chamber at 30°C with a spray of 3% sodium chloride solution and also by alternate immersion in the same solution for 10 minutes and drying in air for 50 minutes. Specimens were cut from the sheet after test for mechanical tests. Results of the corrosion tests are given in Table 2 (loss of the mechanical strength after being for two years  
Card 1/8

21221

X

S/126/61/011/003/009/017  
E021/E435

The Relation Between ...

(clad specimens) and one year (unclad specimens) in a moisture chamber) and the time to produce the first crack in specimens stressed by bending into a loop. The results are the averages of twenty five measurements. In the bend test the alloys quenched from 450 gave better results than those quenched from 500°C. For the alloys air cooled from 475°C, the 24 hour treatment at 120°C was the most unfavourable ageing treatment. For the alloys which were water cooled, the lowest results were obtained after natural ageing. The worst results from the mechanical tests were obtained from the naturally aged samples. The resistance to corrosion cracking increased with increase in ageing time. Additional tests were carried out with the alloys given in Table 3 which contained no chromium or manganese. Strip, 1 mm thick, was rolled from billets produced by continuous casting and water cooling. After quenching from 475°C, the alloys were aged at temperatures varying from room temperature to 450°C and times of 8 hours to 60 days. The decomposition of solid solutions was followed by electrical resistance measurements. The greatest electrical resistance was shown by the samples which had least corrosion resistance. Fig.1 shows the change in electrical  
Card 2/8

<sup>1111</sup>  
S/126/61/011/003/009/017  
E021/E435

The Relation Between ...

resistance,  $\rho_{25}$ , ohm, with time of ageing, hours, and Fig.2 the change in resistance,  $\rho$ , ohm.cm. $10^{-6}$ , with temperature of ageing, °C. Photos of microstructures after different ageing treatments are reproduced in the paper. In the initial stages of ageing when no visible precipitation took place, the electrical resistance and sensitivity to corrosion cracking were both the maximum. It was suggested that corrosion of the alloys occurred as a result of a higher content of alloying element in thin intergranular zones causing intercrystalline internal adsorption which was intensified by increase in temperature before quenching. The difference in concentration of solid solution at the boundaries and in the middle of the grain created a difference in electrode potential of microregions which was the necessary condition for the start of the corrosion process. The main ways of reducing the tendency to corrosion cracking were to obtain minimum intercrystalline adsorption or to decompose the solid solution at the grain boundaries. This could be done by decreasing the temperature before cooling and by choosing the best ageing treatment. For the V95 series of alloys, the best ageing treatments were the stepped ageing or 8 to 12 hours at 140°C, when the decomposition

Card 3/8

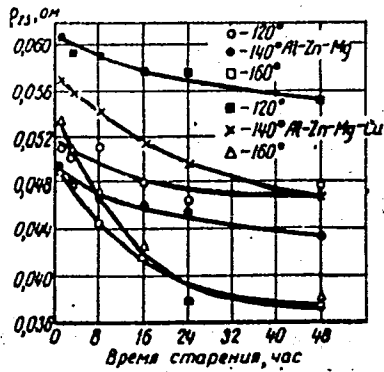
21221

S/126/61/011/003/009/017  
E021/E435

The Relation Between ...

process at the grain boundaries reached the stage of formation of stable particles and the concentration difference of potential decreased considerably but the alloys still retained sufficient strength. There are 3 figures, 6 tables and 9 references: 8 Soviet and 1 non-Soviet.

SUBMITTED: September 10, 1960.



Card 4/8

Fig. 1.

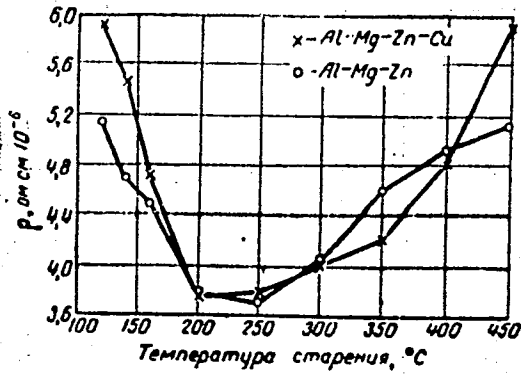


Fig. 2.

S/762/61/000/000/027/029

AUTHOR: Konstantinova, Ye. V.

TITLE: Novel methods for the etching of titanium alloys.

SOURCE: Titan v promyshlennosti; sbornik statey. Ed. by S. G. Glazunov.  
Moscow, 1961, 295-304.

TEXT: The paper describes a method for the etching of titanium-alloy sheet material; the sheets are treated with a solution of sulfuric acid and calcium fluoride and are then brightened with a nitrogen-fluoride solution. A two-stage electrolytic method is also described. The  $H_2SO_4$  method is an improvement over a method previously employed by a Soviet plant in which half-finished Ti products were etched in a solution of 350 ml HCl and 50 g NaF per liter. The shortcomings of the HCl method were: A service life of only 5-6 hrs, a shelf life of only a few hours, and the impossibility of reactivating the bath by restoration of the original concentration of its components. Thus, 3 tons of HCl were consumed per ton of production, much manpower was immobilized in the continual draining and refilling of inactive, yet still highly concentrated, acid, and the HCl was so difficult to neutralize that all surrounding waters were poisoned with the dumped waste acid. The precise causes of the failure of the old method are briefly analyzed. The  $H_2SO_4$  method: The method proceeds in two stages: (1) A 5-10-min treatment in 30%  $H_2SO_4$  + 0.4%  $CaF_2$  solution at 80-100°C in a heat- and acid-proof vat; (2) a

Card 1/3

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Novel methods for the etching of titanium alloys.

S/762/61/000/000/027/029

treatment in a 10%  $\text{HNO}_3$  + 4%  $\text{NaF}$  solution, which is started at room temperature, when the solution is fresh, and continued at T rising gradually to 60-70°C (steam heating) as the solution becomes exhausted. The principal advantage of this method is the longer service life of its  $\text{H}_2\text{SO}_4$  etching solution (6-8-times that of the  $\text{HCl}$  bath). Most of the tests were performed with BT1 (VT1), BT6 (VT6), BT14 (VT14), OT4, and OT4-2 alloys. An investigation of the hydrogenation of VT6 and VT14 alloys in  $\text{H}_2\text{SO}_4$  etching baths showed that its degree is practically independent of the etching-solution T (within the 80-100° range) and that it increases somewhat with soaking time. It is recommended that sheet alloys prone to hydrogenation be etched in a fresh solution for about 5 minutes and then brightened in a warmed (50°) nitrogen-fluoride solution. The mean H content will then amount to some 0.003% (test data obtained with the various alloys are shown in two full-page tables). Electrolytic etching: The method proposed eliminates practically any and all scale formations from Ti-alloy sheets, even those accumulated at 800-1,000°, without recourse to high T's; a suitable direct-current reversal period has been established experimentally. The volumetric composition of the electrolyte comprises 20%  $\text{H}_2\text{SO}_4$ , 4%  $\text{HNO}_3$ , 1%  $\text{HF}$ , 3.7%  $\text{FeSO}_4$ , the remainder water. Optimal operational T: 40-50°C. Initially, the semi-finished part serves as an anode (10 a/dm<sup>2</sup>, 60 v), whereupon the scale begins to loosen as a result of the development of O; after d.c. reversal the part serves as a cathode (20 a/dm<sup>2</sup>, 6 v), and the vigorous development of H removes the scale and, perhaps, reduces it partially. The experimentally

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Novel methods for the etching of titanium alloys.

S/762/61/000/000/027/029

determined optimal reversal times for the various alloys (same as those tested in the  $H_2SO_4$  chemical-etching test) and their various antecedent heat treatments are listed in a full-page table. There is little loss of metal and little loss in ductility. The degree of hydrogenation is independent of T and of treatment time; the mean H content in VT6 sheets is 0.001%, in VT14 sheets 0.003% (full-page table with details). Reactivation of the electrolyte with fresh solution is limited by the accumulation of Ti ions which produces a sludge and renders the electrolyte inactive. 12 dm<sup>2</sup> of metal surface can be etched by a liter of solution. Development of a regeneration method for the solution is a paramount need. The method was tested in 100- to 300-liter vats under industrial pilot-plant conditions. Stirring of the bath by compressed air, in contrast to the mechanical stirring employed in the lab, reduced the service life of the solution to 10 dm<sup>2</sup> of metal surface by oxidizing the bivalent Ti in the solution to the tri- and then tetravalent state, in which it inhibits the activity of the etching solution. There are 4 tables; no figures or references.

ASSOCIATION: None given.

Card 3/3

KONSTANTINOVA, Ye.V., kand. tekhn. nauk; SEMENOVA, L.S.

Investigating the corrosion resistance of materials in a  
saturated solution of sodium chloride. Sbor. nauch. trud.  
UkrNIISol' no.7:121-125 '64 (MIRA 18:1)

L 64458-65 ENT(m)/EPF(c)/ENA(d)/EWP(t)/EWP(z)/EAF(b) MJW/JD/WB/MJW(CL)  
 ACCESSION NR: AP5020699 UR/0314/65/000/008/0019/0023 51  
 669.15-174.669.20.10-22:20.193:661.419 11

AUTHORS: Fokin, M. N. (Candidate of chemical sciences); Konstantinova, Ye. V. 11  
 (Candidate of technical sciences); Baru, R. A. (Engineer)

TITLE: Corrosion of nickel-chromium-molybdenum alloys and anodized titanium in hydrochloric acid 27 27 21 27

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 8, 1965, 19-23

INDEX TAGS: nickel, molybdenum, chromium, alloy, hydrochloric acid, corrosion/  
 NIKMO-28 alloy, NIKhMO-15-15 alloy, NIKhMO-20-10 alloy

ABSTRACT: The corrosive behavior of the following industrial Ni-Cr-Mo alloys in HCl was studied: NIKMO-28, NIKhMO-15-15, and NIKhMO-20-10. In addition, the corrosion behavior of ten different Ni-Mo-V alloys prepared after Ye. V. Zetova ("Khimicheskoye mashinostroyeniye," 1960, No. 4.), and of anodized titanium in HCl was also studied. The experimental results for alloy NIKMO-28 are shown graphically in Fig. 1 on the Enclosure and those for anodized titanium in Fig. 2 on the Enclosure. It is concluded that the alloy NIKMO-28 may be used safely in solutions of all possible HCl concentration, provided the temperature

Card 1/4

L 64452-65

ACCESSION NR: AP5020699

is kept below 80C. Alloys <sup>15</sup> NIKhMO-15-15 and <sup>15</sup> NIKhMO-20-10 <sup>2</sup> may be used in all concentrations of HCl up to a temperature of 60C. Orig. art. has: 4 tables and 7 graphs.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 02

SUB CODE: GC <sup>MM</sup>

NO REF SOV: 003

~~OTHER~~: 000

Card 2/4

L 64458-65

ACCESSION NR: AP5020699

ENCLOSURE: 01

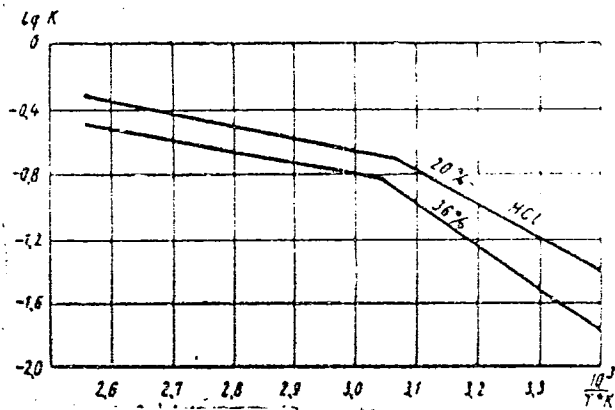


Fig. 1

Dependence of the logarithm of the corrosion rate constant K for alloy NIMO-28 in 20 and 36% HCl solution on the reciprocal absolute temperature

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L 64458-65

ACCESSION NR: AP5020699

ENCLOSURE: 02

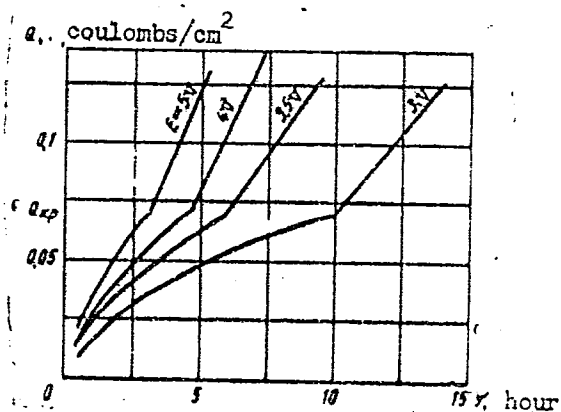


Fig. 2.

Change in quantity of electricity used in the anodic oxidation of Ti in 20% HCl at 20°C as a function of time  $\tau$  for different anode potentials E

llc  
Card 4/4

UCHASTKINA, Z.V.; KONSTANTINOVA, Ye.V.; PATSATSIYA, O.A.

Level of organization in the woodpulp and paper industry. Trudy  
LPTTSBI ~~no. 113~~ 10:1965. (MIRA 18:8)

FOKIN, M.N., kand.khim.nauk; KONSTANTINOVA, Ye.V., kand.tekhn.nauk;  
BARU, R.A., inzh.

Corrosion of nickel-chromium - molybdenum alloys and anodically  
protected titanium in hydrochloric acid. Khim.i nef. mashinostr.  
no.8:19-23 Ag '65. (MIRA 18:12)



L 28400-66 EWT(m)/EWF(t)/ETI IJP(c) JD/HR/JG/NE/GD

ACC NR: AT6013794 (A)

SOURCE CODE: UR/0000/65/000/000/0148/0160

AUTHOR: Fokin, M. N.; Konstantinova, Ye. V.; Baru, R. L.

62  
63  
Br1

ORG: none

TITLE: Corrosion of nickel-molybdenum and nickel-chromium-molybdenum alloys and anodically protected titanium in hydrochloric acid

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2. Moscow, Izd-vo Metallurgiya, 1965, 148-160

TOPIC TAGS: nickel alloy, molybdenum alloy, chromium containing alloy, titanium, corrosion, hydrochloric acid / NIMO-28 Ni-Mo alloy, NIKhMO-20-10 Ni-Cr-Mo alloy, VT1 titanium alloy

ABSTRACT: This investigation deals with the corrosion behavior of Ni-Mo and Ni-Cr-Mo alloys in HCl of various concentrations (5-36%) and temperatures with the object of determining their suitability as substitutes for tantalum as a structural material. The 690-hr corrosion tests were carried out in 0.5-1.0 liter flasks with a reflux condenser, with weighing of the specimens after every 16, 40, 90, 190, 390 and 690 hr of exposure. It is established that the corrosion rate changes with increasing concentration of HCl, passing through a maximum in the 15-20% range. NIMO-28 Ni-Mo alloy

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L 28400-06

ACC NR: AT6013794

may be recommended as a structural material in HCl of any concentration at temperatures of up to 80°C, while the NIKhMO-15-5 and NIKhMO-20-10 Ni-Cr-Mo alloys may be recommended for use in HCl of any concentrations at temperatures of only up to 60°C. owing to the presence of Cr which deteriorates the corrosion resistance of these alloys. A comparison of the findings on the corrosion resistance of these alloys in liquid and vapor phases above the HCl solutions shows that the corrosion rate of specimens of NMO-28 alloy in the vapor phase at 100°C greatly increases whereas at 80° there is virtually no difference in corrosion rates for either phase; this difference at 100°C is attributable to the increase in convective mixing in the thin condensation film of the acid solution on the specimens. Further, it is found that anodic protection in HCl media is effective for Ti and its alloys. Laboratory electrochemical studies of the corrosion of VT1 titanium in 20% HCl at 20 and 80°C, performed with the aid of an electronic potentiostat, showed that in this case anodic protection against the corrosion of Ti can be accomplished if the potential range corresponding to passive state is -0.1 v to +2.4 v and the critical current density is 0.22 ma/cm<sup>2</sup>. During evaporation of 20% HCl (at 60 and 90°C) the corrosion of Ti in the vapor phase may increase very sharply, however, and this limits the applicability of the anodic protection of Ti in these conditions. There apparently exists a certain critical thickness of the anodic film (0.05 μ) beyond which the film gets partly disintegrated; there is reason to believe that the corrosion cracking of Ti in fuming HNO<sub>3</sub> at room temperature is due to similar causes. Orig. art. has: 11 figures, 4 tables.

SUB CODE: 07, 11. 2" SUBM DATE: 19Jul65/ ORIG REF: 004/ OTH REF: 003

Card 2/2 LC

USSR / Cultivated Plants. Forage Crops.

M-5

Abs Jour: Ref Zhur-Biol., 1958, No 16, 73006.

Author : Konstantinova, Z. P.  
Inst : Moscow Agricultural Academy imeni K. A. Timiryazev.  
Title : Lucerne Seed.

Orig Pub: Dokl. Mosk. s.-kh. akad. im. K. A. Timiryazeva, 1957,  
vyp. 28, 259-263.

Abstract: Results are reported of the study of different forms of lucerne according to biological characteristics and economically valuable signs in Moscow Oblast. 540 numbers belonging to sative, staive-hybrid, falcate and falcate-hybrid forms were subjected to study. It was established that prolongation of vegetation period in lucerne is a good mark for selection of vegetation period in lucerne is a good mark for selection. By comparing the data of productiv-

Card 1/2

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S/020/62/144/003/030/030  
B144/B112

AUTHORS: Dokukin, A. V., Konstantinova, Z. S., Chechulin, Yu. S.,  
and Bukin, Yu. V.

TITLE: Effect of vitamin B<sub>15</sub> (pangamic acid) on the resistance  
of the organism and its cardiovascular system to hypoxia

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962,  
675 - 677

TEXT: Calcium and sodium salts of the natural homolog of pangamic acid  
(gluconodimethyl aminoacetate) were used to study the effect of B<sub>15</sub> on  
the resistance of: (1) the organism of mice and rats to general asphyxia;  
(2) the myocard of cats and dogs to local hypoxia. (1) 150 - 500 mg B<sub>15</sub>/kg  
was subcutaneously administered to 121 out of 245 mice 1 - 5 days before  
the experiment. The animals were then put into a hermetically sealed  
chamber and observed until they perished. Their average period of survival  
exceeded that of the control animals (p = 0.06). 13 rats were treated  
50 : 50 with a subarachnoid dose of 10 mg B<sub>15</sub>/kg in 0.05 ml 0.9% NaCl

Card (1/8)

DOKUKIN, A.V.; KONSTANTINOVA, Z.S.; CHECHULIN, Yu.S.; BUKIN, Yu.V.

Effect of vitamin B<sub>15</sub> (pangamic acid) on the resistivity of the  
organism and its cardiovascular system to hypoxia. Dokl. AN SSSR  
144 no.3:675-677 My '62. (MIRA 15:5)

1. Predstavleno aktsionikom A.N. Bakulevym.  
(Vitamin B<sub>15</sub> - Physiological effect)





BC

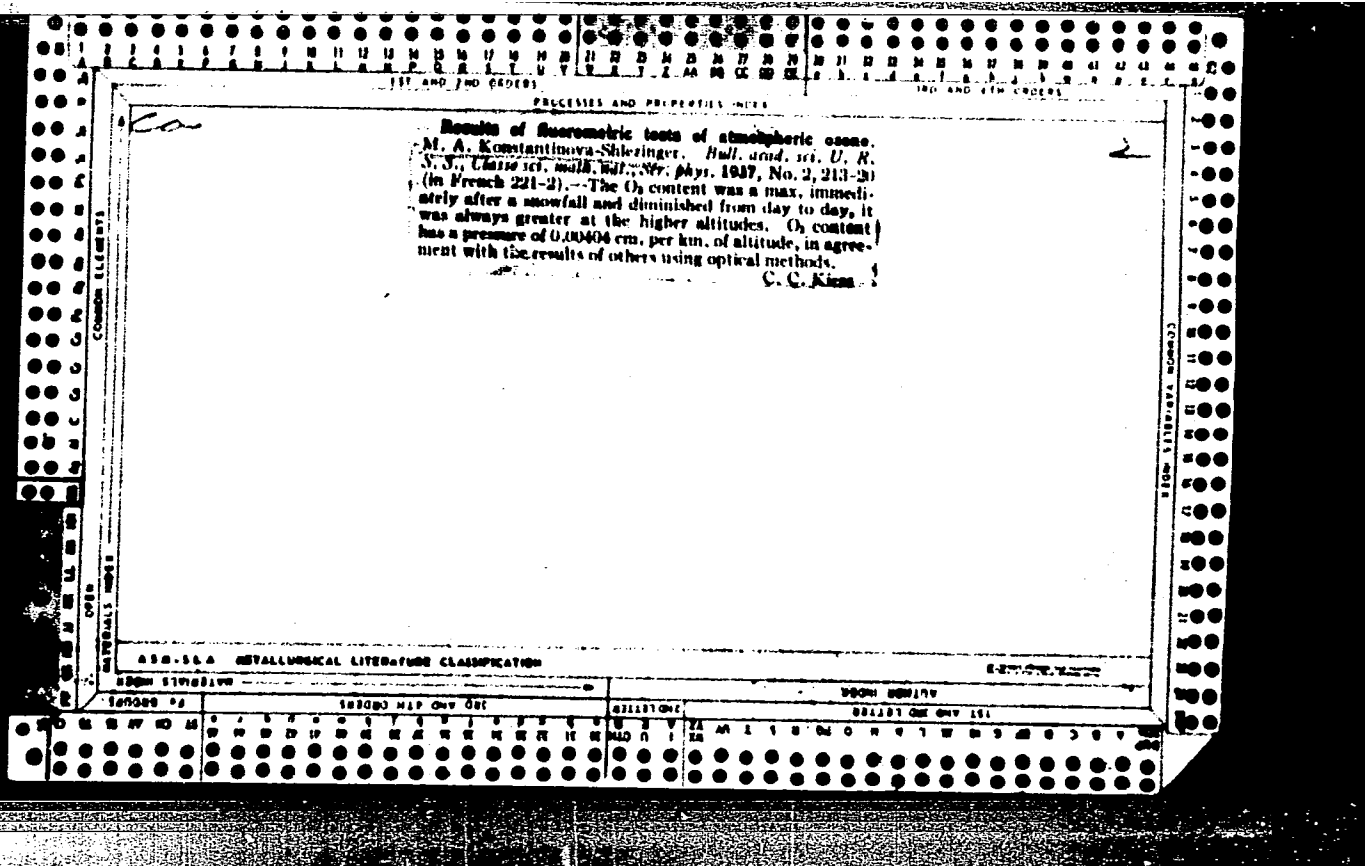
A-1

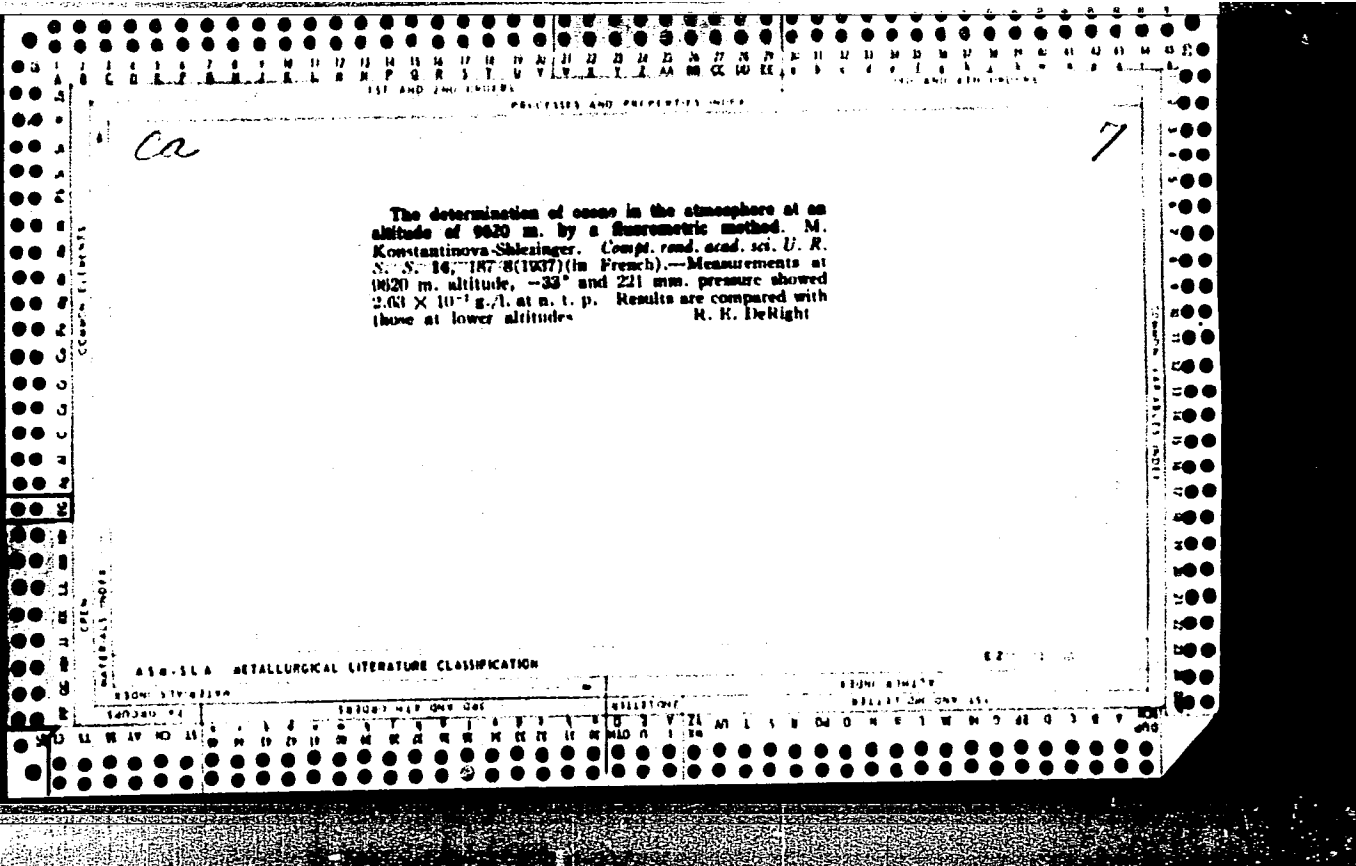
Photochemical decomposition of sulfur dioxide. M. KONSTANTINOVA-SCHLESINGER (J. Phys. Chem. U.S.S.R., 1955, 6, 601-606).—The reaction  $2SO_2 \rightarrow S + 2SO_3$  was studied in a quartz vessel. In the dark the reverse reaction took place. On irradiation  $SO_2$  also decomposes into  $SO_3$  and  $O_2$ .  
 CH. ABN. (a)

ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION

GROUP	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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PROCESSES AND PROPERTIES INDEX

The pH influence of the solution on the fluorescence spectrum of the dissolved substance. (Methods of fluorescent analysis). M. Konstantinova-Shlezinger. *J. Phys. Chem. (U. S. S. R.)* 11, No. 5, 601-5 (1939). - A mol. possessing either acidic or basic properties changes its fluorescence with the pH change of the soln. A salt of a weak org. base or of a weak org. acid in an aq. soln. is hydrolyzed even at the small concn. at which the fluorescence investigations are made, and we can (depending on the pH of the soln.) observe the fluorescence of the ions as well as of the undissoc. mol. of the acid or base. In case of a const. concn. of acridine (1 ml. of an alc. soln. of acridine in 20 ml. of acid), but with a diminishing acidity of the soln. (pH from 4.6 to 7.6) the fluorescence color changes from green (acridine ion) in the acidic to violet (undissoc. base) in the basic soln. (1.35 N NaOH soln.). Similar, but more complex, results are observed with quinine. Here we observe a light-blue (dibasic ion) and a violet (monobasic ion) fluorescence. The undissoc. base does not fluoresce. Quinine sulfate and quinine chloride at a concn. of  $2.1 \times 10^{-4}$  g./ml. show similar fluorescence spectra giving a violet fluorescence not only at pH = 7.6, but even at pH = 9.4. By assuming the fluorescence intensity to be proportional to the concn. of the fluorescent ions the disson. const. can be calcd. A no. of solns. of a weak

acid with an increasing pH show a fluorescence of the undissoc. mol. of the acid in an acidic soln., and of the acid ion in a basic soln. Solns. of intermediate pH show the sign of both fluorescences. In a fluorescein soln. the fluorescence spectra are influenced by the pH change to a much smaller degree, because its mol. contains two phenol groups together with the COOH group. The author considers that the influence of the solvent is much smaller than is usually supposed. The data on the fluorescence of the solns. would be much more valuable if the fluorescences were described separately for the ions and for the undissoc. mol. Addnl. exptl. results will be published later. Six absorption spectrum photographs, 1 diagram and 4 references are given.

W. R. Henn

ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNONYM

SYNONYM WITH GROUP

RELATIONS

FROM GROUP

RELATIONS WITH

GROUP

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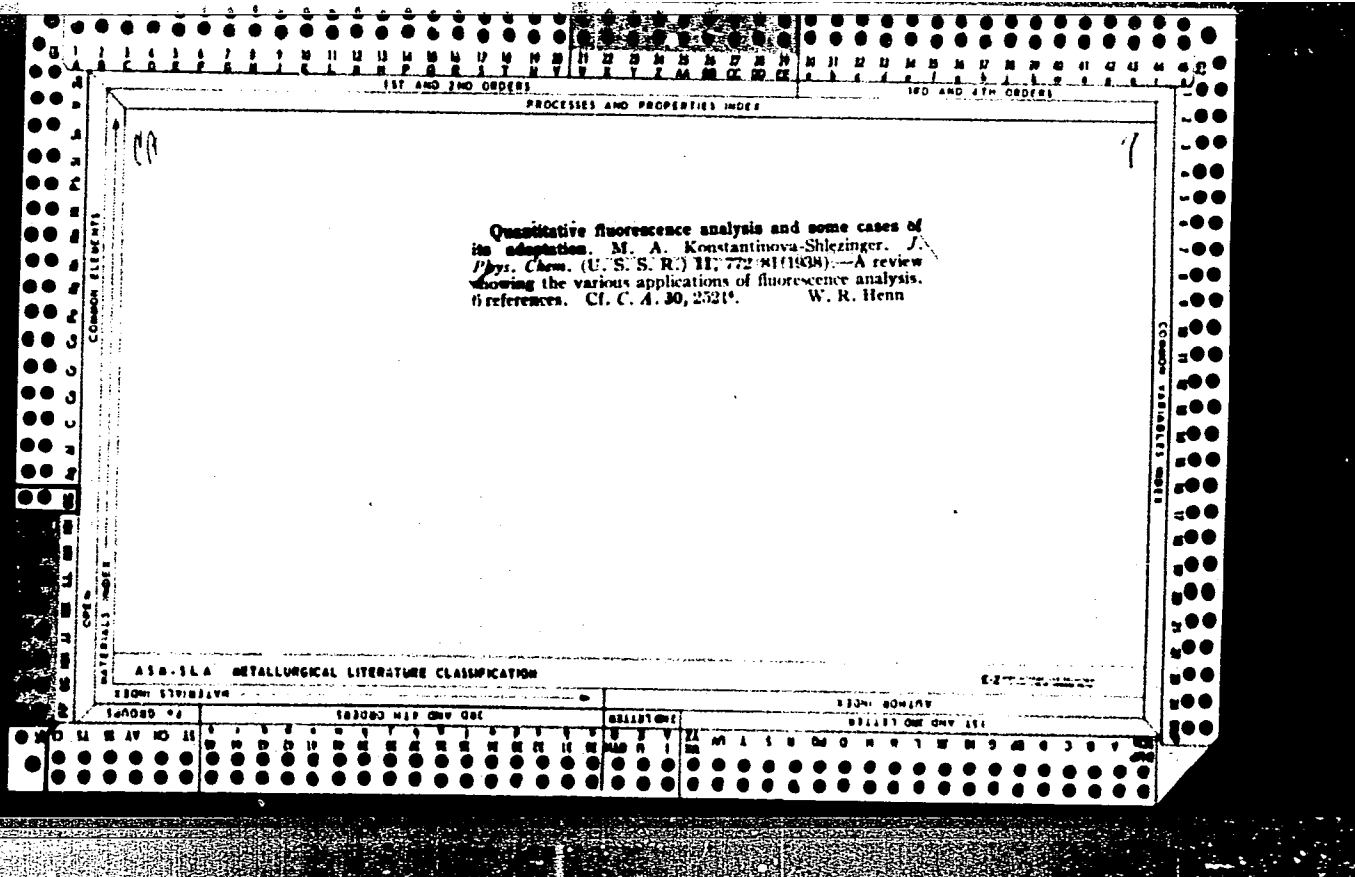
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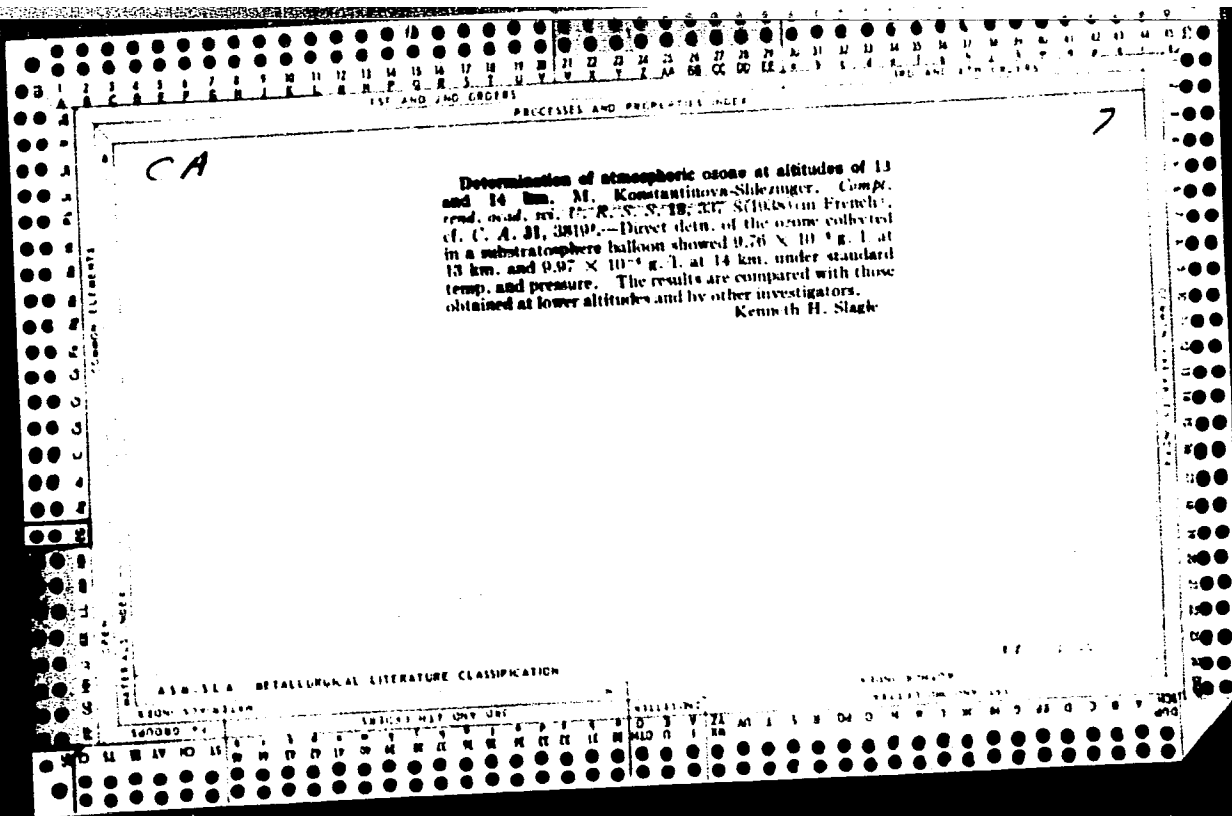
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137 AND 138 CODES

PROCESSES AND PROPERTIES INDEX

140 AND 141 CODES

bc

100. ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ and its applications. H. A. KOL  
~~XXXXXXXXXX~~ (Trans. Am. Soc. Met., 1906, 6, 400-406). H. T. T.

COMMON ELEMENTS

COMMON VALUABLES INDEX

MATERIALS INDEX

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

LETTERS

GROUPS

GROUPS	LETTERS	GROUPS
A	A	A
B	B	B
C	C	C
D	D	D
E	E	E
F	F	F
G	G	G
H	H	H
I	I	I
J	J	J
K	K	K
L	L	L
M	M	M
N	N	N
O	O	O
P	P	P
Q	Q	Q
R	R	R
S	S	S
T	T	T
U	U	U
V	V	V
W	W	W
X	X	X
Y	Y	Y
Z	Z	Z

PROCESSIES AND PROPERTIES INDEX

7

*Conf*

Luminescence analysis and its application. II. M. A. Kostogomova-Gibshlager. *Zavodskaya Lab.* 8, 957-62 (1939); *Khim. Referat. Zhur.* 1940, No. 3, 49-50; cf. *C. A.* 33, 619; 35, 2899. — K. discusses the methods of qual. and quant. luminescence analysis and their advantages, consisting in the rapidity and ease of performing the analysis and points out a no. of difficulties during the identification of the fluorescing substance. In some cases it is necessary to use photomicrography of the spectrograms to differentiate the substances from the initial spectra of luminescence. The luminescence method can be used for nonfluorescing substances if a reaction can be selected which leads to the formation of the fluorescing substance in them. Quant. luminescence analysis consists of measuring the intensity of the fluorescence of the soln. under investigation and comparing it with a standard soln. of a known concn. The intensity of radiation is measured with spectrophotometers, by the method of extinction until the visible region is reached and by means of photoelements. The fluorescence method can be used to det. ozone in air samples from the stratosphere. The detn. is based on the oxidation by ozone of the nonfluorescing dihydroacridine to the fluorescing acridine. Fluorescing substances can be used as indicators during titrations of acids and bases in colored solns.

W. R. Henn

A 13. 11 A METALLURGICAL LITERATURE CLASSIFICATION

A-Z AND 10 LETTERS

1-10 AND 11-12

13-15 AND 16-17

18-20 AND 21-22

23-25 AND 26-27

28-30 AND 31-32

33-35 AND 36-37

38-40 AND 41-42

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78-80 AND 81-82

83-85 AND 86-87

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568-570 AND 571-572

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578-580 AND 581-582

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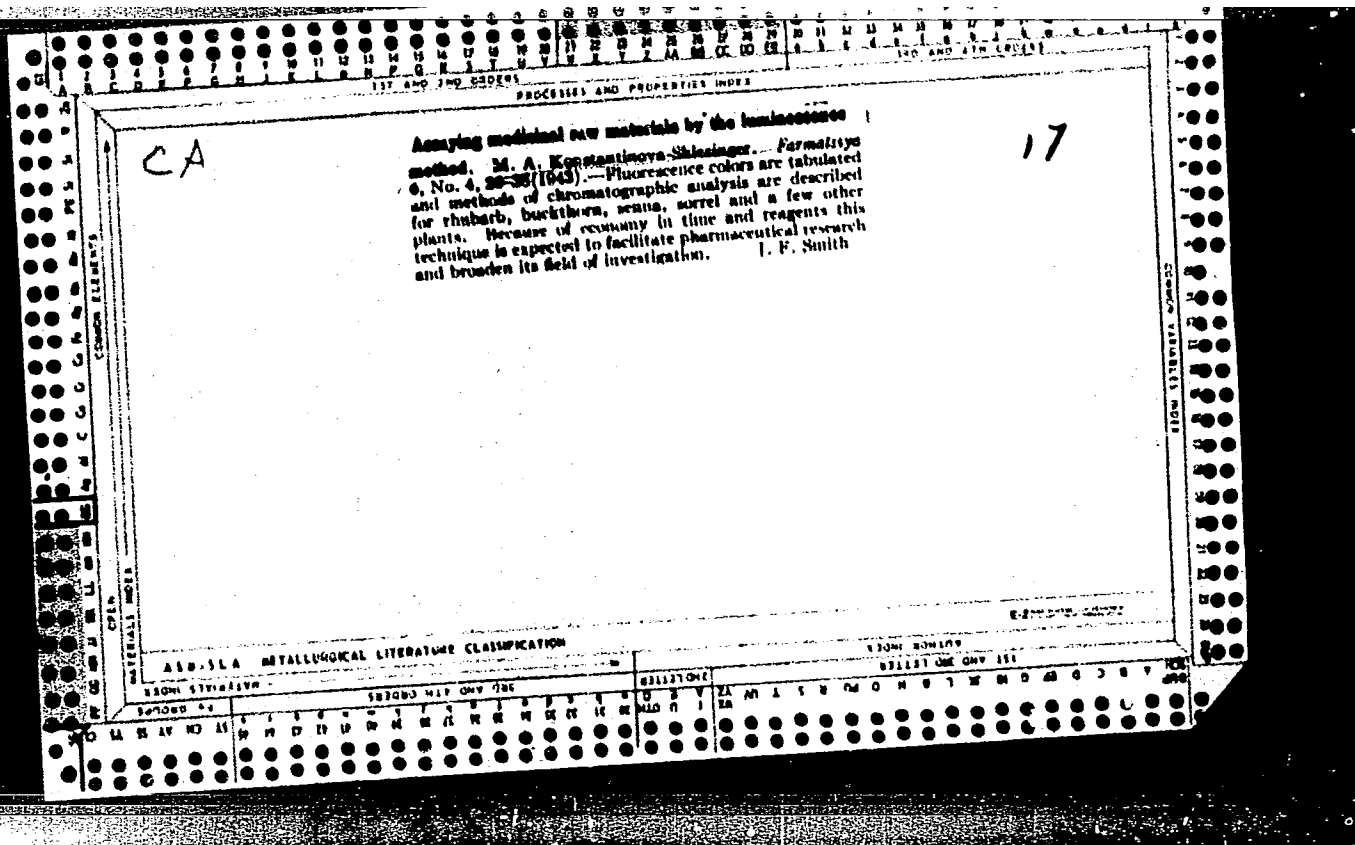
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Underlying theory and the application of fluorescent analysis. M. A. Kuzantsova-Shteingel. Bull. Acad. Sci. U. R. S. S., Ser. phys. 6, 114-16(1940).—A review with helpful hints. The fluorescence test can be applied to the detn. of ozone in air. R. G.

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