"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

L 33381-66

ACC NR: AP6021433

hydrogen power sources, consisting of a rotating drum, sliding blocks, electrode holders, tanks with solutions, circulation pumps and electric heaters (see Fig. 1). To improve both the automatic feature of the machine and the quality of electrodes produced, it is equipped with rods rigidly fixed in the sliding blocks and evenly distributed in a circle. Orig. art. has: 1 figure. [JR]

SUB CODE: 13/ SUBM DATE: 27Mar64/ ATD PRESS: 5026

Card 2/2 JS

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

LEVIN, Ye.Ye., kand.tekhn.nauk; LIVSHIT, Ye.M., kand.tekhn.nauk; [illegible], V.S., inzh.; [illegible], [illegible], inzh.

Nickel based alloys for stationary gas turbines. Energomashinostroenie [illegible] no.9:30-35 Ap '60. (Mikh[illegible])
(Gas turbines) (Nickel alloys)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

87884

S/114/60/000/008/005/010
E193/E255

18.1250 1416.1496.1454

AUTHORS: Levin, Ye. Ye., Pivnik, Ye. M., Candidates of Technical Sciences and Kultygin, V. S. and Lyubimskiy, B. E., Engineers

TITLE: Nickel-Base Alloys for Stationary Gas-Turbines

PERIODICAL: Energomashinostroyeniye, 1960, No. 8, pp. 30-35

TEXT: The object of the investigation, described in the present paper, was to determine the effect of various factors on the high-temperature properties of two nickel-base alloys ЭИ607 (EI607) and ЭИ607А (EI607A), whose composition is given below:

Table 1

Alloy	C	Si	Mn	Cr	Ni	Nb
EI607	<0.08	<0.8	<1.0	15-17	Base	1-0.1.5
EI607A	<0.08	<0.8	<1.0	16-17		1-0.1.5

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

87884
S/114/60/000/008/005/019
E193/E255

Nickel-Base Alloys for Stationary Gas-Turbines

Alloy	Ti	Al	Fe	Ti/Al	S	P
EI607	1.8÷2.3	<0.5-1.0	<3.0	2.7	<0.02	<0.02
EI607A	1.4÷1.8	<0.5-1.0	<3.0	[illegible]	<0.02	<0.02

The results of the experiments (tabulated or reproduced graphically) include data on the following subjects: (1) The effect of the titanium content on the deformation and time-to-rupture of both alloys, tested at 700°C under a stress of 25 kg/mm²; the optimum titanium content was found to be approximately 1.8%; (2) the beneficial effect of addition of 1.56% Nb on the mechanical properties of the alloys both at room temperature and at 700°C; (3) the beneficial effect of the so-called multistage heat treatment (quenching after 8 h at 1100°C followed by 8 h at 1000°C + 1 h at 900°C + 2 h at 800°C + 20 h at 750°C); (4) the time-to-rupture characteristics of the two alloys at 650 and 700°C, determined on both notched and unnotched specimens; (5) the effect of

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E193/E255

Nickel-Base Alloys for Stationary Gas-Turbines

of ageing at various temperatures on the mechanical properties of the alloys; (6) the effect of the variation of the conditions of the multi-stage heat treatment on the mechanical properties of the alloys; (7) the effect of increasing the aluminium content in the EI607A alloy on its mechanical properties and creep characteristics; (8) the effect of temperature and time on the microstructure of the alloys; and (9) quantitative data on the linear coefficient of thermal expansion, heat conductivity, and elastic moduli of the alloys at various temperature ranges. Some of the more important results are summarized in a table reproduced below under the following headings: name of the alloy (EI607, EI607A, EI607A plus aluminium); test temperature (°C); breaking stress (kg/mm²) in creep of 1000, 5000, 10 000, and 100 000 h duration; and stress (kg/mm²) required to produce total elongation of 1% after 10 000 h. It was concluded that, subject to their receiving a suitable (multi-stage) heat treatment, the alloys studied can be recommended as materials for blades and other load-carrying components of gas turbines. There are 12 tables, 6 figures and 5 Soviet references.

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S/114/60/000/008/005/010
E193/E255

Nickel-Base Alloys for Stationary Gas-Turbines

Table 11

ТАБЛИЦА 11

Жаропрочность сплавов ЭИ607, ЭИ607А и ЭИ607А + Al

Сплав	Температура испытания °С	Предел длительной прочности, кГ/мм² за				Предел ползучести, 1% за 100 000 час.
		1000	5000	10 000	100 000	
		час.				
ЭИ607	650	45	32	28	—	—
	700	28	22	17	—	—
ЭИ607А	650	38	28	26	21	—
	700	23	22	20	15–17	13
ЭИ607А+Al	700	30	25	22	17	—
	750	21	16	13	10	8,5

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

86066

18 1150 1416,1454 S/180/60/000/005/007/033
E111/E135

AUTHORS: Levin, Ye Ye., and Pivnik, Ye.M. (Leningrad)

TITLE: Stabilisation as a Method of Raising the High-Temperature Plasticity of Highly Alloyed Alloys

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No 5, pp 86-95

TEXT: The authors describe their investigation of three heats of an iron-nickel-chromium base alloy with some (unspecified) comparatively low contents of tungsten, titanium and aluminium. This is a possible substitute for types EI-607 (EI-607), EI-869 and EI-765 nickel base alloys. In addition to the usual short-time and long-time mechanical tests, a constant-speed procedure was also used. Specimens were hardened from 1100, 1150, 1180 and 1210 °C with air cooling and then subjected to stepwise heat treatment: 4 hours at 1000 °C followed by slow cooling to 900, 850 and 750 °C with holding time of 8, 15 and 20 hours, respectively, and final cooling in air. Tests were carried out at 20 and 750 °C. Results are shown in Table 1 (in brackets for 750 °C). Different variants of stepwise heat treatment (Table 2) were tried. Table 4 showing the corresponding properties

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

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E111/E135

Stabilisation as a Method of Raising the High-Temperature Plasticity of Highly Alloyed Alloys

The results of tests with a constant speed of deformation of 0.8%/hour are shown in Table 5 and Fig 1 Mechanical tests during long-time ageing at 750 °C confirm the effectiveness of stepwise heat treatment (Table 6) A further series of mechanical tests were carried out at temperatures up to 800 °C (Table 7) Phase and X-ray structural analysis showed that the main hardening phase is $Ni_3(AlTi)$, the γ -phase Figs 2 and show respectively the microstructures and electron photographs for specimens of the two heats after various heat treatments Granular and needle-like particles are formed during ageing Table 8 gives the particle diameter and quantity of the γ'-phase The two heats were found to have different properties after identical heat treatments Tables [illegible] and [illegible] Needle-like particles reduce both long- and short-time strength Their formation is promoted by increasing the hardening temperature. The development of the γ'-phase during ageing at 900 °C of type EI-787 material hardened from 1200 °C is shown in Fig 4

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

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S/180/60/000/005/007/033
E111/E135

Stabilisation as a Method of Raising the High-Temperature Plasticity of Highly Alloyed Alloys

Table 11 shows the content and chemical composition of precipitate electrolytically separated from the test alloy after various heat treatments. N Ye. Shlepyanova participated in the physico-chemical study of the precipitates. Formation of the needle-like structure reduces the content of the main hardening phase in the alloy. The appearance of isolated precipitates is shown in the electron-microscope photographs in Fig 5.

There are 5 figures 11 tables and 4 Soviet references.

SUBMITTED: July 6, 1960

Card 3/3

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

S/659/61/[illegible] 44
D217/D303

18.1250

AUTHOR: Pivnik, Ye.N.

TITLE: Formation and propagation of cracks in nickel-base alloys at high testing temperatures

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. [illegible], 1961, 1[illegible] - [illegible]

TEXT: Structural investigations, with subsequent microhardness measurements at various portions of the microsection for ascertaining peculiarities of formation and propagation of microcracks during plastic deformation at high temperatures, are described. Specimens of two nickel-base alloys were studied: ЭИ607А (EI607A) and ЭИ607А+В (EI607A+B). All specimens were given a stepwise heat treatment prior to testing in order to ensure maximum structural stability and properties. In order to expose the microcracks and ascertain the circumstances of their formation and propagation in the alloys investigated, longitudinal sections were made from specimens tested at various rates of deformation by cutting them out from the working portion of the specimens close to the place of

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fracture. If the specimen was not tested to fracture, then microsections were made from portions having undergone a maximum degree of deformation. The traces of slip deformation in EI607A-type alloys were exposed by chemical etching in a solution containing 2 g $CuSO_4$ + 10 cm^3 HCl + 1 cm^3 H_2SO_4 + 10 cm^3 H_2O. By electrolytically etching the above material in a solution consisting of 20 g $CuSO_4$ + 5 ml H_2SO_4 + 10 g citric acid + water to 1 liter, particles of the second γ'-phase were exposed. The structure of highly alloyed material was brought out by electrolytic etching in a solution containing 20 cm^3 HCl + 20 cm^3 citric acid + 6 g NaF + 200 cm^3 H_2O. The structure of the metal close to the fracture was inspected at a magnification of X 2000. The microhardness of grains in their center and close to grain boundaries was measured in all cases. High temperature tests were carried out at 400 - 800°C by a method suggested by A.V. Stanyukovich and N.D. Zaitsev (Ref. 6: Zav. Labor., no. 9, 1959). The investigation was carried out at two rates of deformation: 180 % and 4 - 5 % per hour. It was found that the hard-

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

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D217/D303

Formation and propagation of ...

formed destroy the continuity of the grain boundaries, finally leading to a loss in their strength and to destruction of the alloy. There are 4 figures, 4 tables and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: G.W. Chen and E.S. Machlin, J. Metals, 9, no. 7, 1957.

X

Card 4/4

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

L 15710-66 EWP(z)/EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) MJW/JD

ACC NR: AP6003299 (N) SOURCE CODE: UR/0129/66/000/001/0008/0012

AUTHOR: Pivnik, Ye. M.

ORG: TsKTI im. Polzunova

TITLE: Effect of structure on the plasticity and character of fracture of KhN70VMTYu and EI826 alloys

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1966, 8-12

TOPIC TAGS: chromium alloy, metal grain structure, plasticity, carbide phase, solid solution, intermetallic compound / KhN70VMTYu Cr-Mo-W alloy, EI826 Cr-Mo-W alloy

ABSTRACT: The alloys KhN70MVTYu (0.07% C, 15% Cr, 3.6% Mo, 5.5% W, 2.0% Ti, 2.0% Al, 0.005% B, 0.015% Ce) and EI826 (0.04% C, 14% Cr, 3.8% Mo, 6.1% W, 1.9% Ti, 2.7% Al, 0.012% B, 0.010% Ce) are used in industry as blade material. In the process of isothermal exposure (aging) at 700-850°C carbides form in addition to the basic hardening γ'-phase. In both alloys the carbides are located along the grain boundaries, but in the KhN70MVTYu alloy the carbides form in an almost continuous chain along grain boundaries, whereas in the EI826 alloy they are separated by comparatively large particles of γ'-phase. In the process of deformation foci of failure arise along the boundaries of carbides and γ-solid solution. The formation of the carbide chain contributes

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

L 15710-66

ACC NR: AP6003299

to the rise of a large number of adjoining foci of failure along grain boundaries. Conditions contributing to a rapid linkage of the disparate cracks and fracture of carbides cause the fracture of specimens with low plasticity. The plastic properties of the alloys depend on the rate at which the isolated cracks forming in the process of deformation coalesce. In the KhN70VMTYu alloy at strain rates of 3.6 and 0.8%/hr the isolated cracks combined at a higher rate, which led to a marked decrease in plasticity. In the EI826 alloy a marked decrease in plasticity was produced only following straining at the rate of 3.6%/hr. The higher level of plastic properties displayed by the EI826 alloy as compared with the findings for identically tested specimens of KhN70VMTYu alloy, is evidently attributable to the fact that the carbides forming during aging along the grain boundaries of EI826 alloy are separated by the particles of the intermetallic γ'-phase. The reason for this may lie in that the EI826 alloy contains a higher Al content (2.7%) than the KhN70VMTYu alloy (2%). Orig. art. has: 3 tables.

SUB CODE: 11, 13, 20/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 000

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

LEVIN, Ye.Ye.; PIVNIK, Ye.M.; KARASIK, N.Ya.

Development and identification of structure elements in nickel-based heat resistant alloys. Zav. lab. 29 no.9:1085-1088 '63. (MIRA 17:1)

1. TSentral'nyy nauchno-issledovatel'skiy kotloturbinnyy institut imeni I.I. Polzunova.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

LEVIN, Ye.Ye.; PIVNIK, Ye.M.

Effect of structure on the deformability of nickel-base high alloys steels. Issl.po zharopr.splav. 8:242-250 '62.
(MIRA 16:8)

(Nickel steel--Metallography) (Deformations (Mechanics))

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

L 23362-65 EWT(m)/EWP(w)/EWA(d)/EPR/T/EWP(t)/EWP(b) Pad/Ps-4 IJP(c) MJW/
JD/HW

ACCESSION NR: AR5000591 S/0137/64/000/008/I019/I020

SOURCE: Ref. zh. Metallurgiya. Sv. t., Abs. 8I118

AUTHOR: Levin, Ye. Ye., Pivnik, YE. M.; Karasik, N. Ya.

TITLE: Effect of degree of alloying on the phase transitions, structure, and properties of nickel base alloys

CITED SOURCE: Sb. Legirovaniye staley. Kiyev, Gostekhizdat USSR, 1963, 104-115

TOPIC TAGS: nickel base alloy, alloying, metal phase transition, metal structure, metal property, metal aging, metal homogenizing, alloy EI617, alloy EI607A

TRANSLATION: Two modifications (A and B) of alloy EI617 were investigated: A is distinguished from EI617 by a high content of aluminum while in B part of the nickel is replaced by cobalt. The cheapest alloy of Nimonic type EI607A was taken for purposes of comparison. A study was made of the structure of the alloys after homogenizing and after various aging conditions by an X-ray structural analysis was made of the residues separated out electrolytically and

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

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ACCESSION NR: AR5000591

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the change in the mechanical properties of the alloys in the aging process was compared. As opposed to alloy EI607A, the gamma' phase in an amount of 22 and 31% was already present in A and B in the state after homogenizing. In A and B, an unknown X-phase and double carbides appear during the aging process: in A, $Ni_3(W,Mo)_3C$ with a face-centered cubic lattice, in B, $(Ni,Co)_3(W,Mo)_3C$, and also in B there appears a Co_7W_6 intermetallic phase with a rhombohedral lattice. With a change in temperature and duration of aging, the relation between the amount of carbides and the Co_7W_6 in the structure of the X-phase changes. After homogenizing, A has a value of $sigma_b$ equal to 104 kg/mm^2. On aging alloy A for 500 hrs at 750°, the strength increases, and contrary to the case of EI607A, ductility and a_k decrease sharply. In alloy B, strength changes very little during the process of aging at 800° ($sigma_b$ is 130 kg/mm^2). At 900°, there occurs a weakening of the alloy and a sharp drop in ductility and a_k. Contrary to the case of A and EI607A, ductility and a_k in B decrease continuously on prolonged aging, and this appears to be connected with the formation of a Co_7W_6 phase. 3 figures. 8 tables. 8 literature titles. E. Bolin

SUB CODE: MM ENCL: 00

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

EVIN, Yevgeniy Yefimovich, kand. tekhn. nauk; PIVNIK, Yelena Markovna, kand. tekhn. nauk; MIKHAYLOV-MIKHEYEV, P.B., red.; FREGER, L.P., red. izd-va; [illegible], I.A., tekhn. red.

[Progressive methods of heat treatment for heat-resistant alloys high in addition elements] Progressivnye metody termicheskoi obrabotki vysokolegirovannykh zharoprochnykh splavov. Leningrad, 196[illegible]. 3[illegible] p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Metallovedenie i termicheskaia obrabotka, no.4)
(Heat-resistant alloys--Heat treatment) (MIRA 1[illegible])

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, Ye.M.

Formation and expansion of cracks in nickel-base alloys at high testing temperatures. Issl. po zharopr. splav. 7:188-195 '61. (MIRA 14:11)

(Nickel alloys--Metallography)
(Metals, Effect of temperature on)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

ACC NR: AT6034454 (N) SOURCE CODE: UR/0000/66/000/000/0183/0189

AUTHOR: Levin, Ye. Ye.; Pivnik, Ye. M.

ORG: none

TITLE: Intercrystal strength and phase composition of nickel-chromium base alloys

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 183-189

TOPIC TAGS: nickel base alloy, chromium base alloy, phase diagram, metal aging

ABSTRACT: The article starts with tables, based on literature data, which show the mechanical properties and the long term strength of alloys Types EI617 and EIB26. In the present work, black and white photographs were made, in which the intermetallic phase $Ni_3(AlTi)$ is distinguished from the carbide phases by its form and its position in the solid solution. Increased alloying of the above alloys with cobalt (up to 5%) and an increase in the chromium content up to 20% promotes heterogenization at high aging temperatures. A table shows the mechanical properties of the alloys after long term aging at 800-900°. The following conclusions were drawn: 1) with high temperature aging, the carbide phases of the $Me_{23}C_6$ and Me_nMe_mC types, as well as the intermetallic phase of the Co_7W_6 type, are preferably distributed along the grain

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

ACC NR: AT6034454

boundaries, and are characterized by a larger lattice constant than the main hardened phase $Ni_3(Al,Ti)$, and a less perfect lattice. In the process of deformation at high temperatures, it is precisely in these phases that cracking first appears; 2) in this case, when the particles of these phases are broken up by cracking, there is a sharp decrease in the ductility and the toughness of the alloy; 3) at high experimental temperatures, under conditions where the ductility of the solid solution increases, discrete cracks develop; 4) thus, the appearance of cracks in the process of plastic deformation is observed primarily in the coarse grained carbide phases or in the intermetallic phase of the Co_7W_6 type at high experimental temperatures, but the nature of further development of cracking depends on the ratio of the strength and the ductility of these phases and of the solid solution. Orig. art. has: 2 figures and 4 tables.

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Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

Pivnicka, L.

"Twenty-fifth anniversary of the construction of CZ motorcycles." p.177

SVET MOTORU. (Svaz pro spolupraci s armadou) Praha, Czechoslovakia, Vol. 9, no. 25/26, Dec., 1956.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 9, Sept. 1959

Uncl.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNICKI, Dimitrije

On the occasion of death of Egas Monic; 1874-1955. Med. arh., Sarajevo 10 no.1:115-116 Jan-Feb 56.

(OBITUARIES,
Monic, Egas. (Ser))

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNICKI, D.

Insulin in the treatment of schizophrenia. Neuropsihijatrija 7 no.1-2:56-63 '59.

1. Klinika za sivcane i duševne bolesti Medicinskog fakulteta u Sarajevu, šef: prof. dr. Nedo Zec.
(SCHIZOPHRENIA ther.)
(SHOCK THERAPY INSULIN)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIWNICKI, D.

Allan Memorial Institute of Psychiatry (Letter from Montreal).
Neuropsihijatrija 7 no.3:235-237 '59.
(HOSPITALS PSYCHIATRIC)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNICKI, Dimitrije

On the occasion of death of Egas Monic; 1874-1955. Med. arh., Sarajevo 10 no.1:115-116 Jan-Feb 56.

(OBITUARIES,
Monic, Egas. (Ser))

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

KOPACOVA, L.;VRBA, C.;PIVNIK, J.;SKARDA, R.

Topical tolerance to local anesthetic effect of prolonged-action benzocaine solution behaving as a microcrystalline implant. Cesk. fysiol. 9 no.1:84-85 Ja 60.

1. Odd. farmakodynamiky a toxikologie farmaceuticke fak. MU. Ustav farmakologie a Ustav patologicke anatomie vet. fak. VSZL, Brno.
(ANESTHETICS LOCAL pharmacol.)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

R-3

YUGOSLAVIA/Diseases of Farm Animals - Diseases of Unknown Etiology.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 16959

Author : Mivnik, L.
Inst : -
Title : Preliminary Data on the Occurrence of the So-Called Enzootic Cardiac Paralysis of Hens in Moravia.

Orig Pub : Veterinarstvi, 1956, 6, No 11, 328-329.

Abstract : Cases of sudden death of hens were observed in different regions of Moravia. Attempts to isolate the pathogenic agent produced a negative result. The author assumes that the cause of the murrain of the hens was toxicosis. 30-60%, and on single farms even 100%, of the flock died. In all cases, violations of zoohygienic regulations and diet deficiencies were discovered. The murrain of hens started in autumn and ended in March; according to other data, the summer months marked the beginning of the

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, S. A.: Master Biol Sci (diss) -- "Ecological-biological [illegible] of Pinus pumila (pall.) rel. under the conditions of mass plantations in the northwestern portion of their area". Leningrad, 19[illegible]. [illegible] pp (Acad Sci USSR, Botanical Inst im V. L. Komarov), [illegible] copies (KL, No [illegible], 19[illegible], 1[illegible])

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, S. A.

K-

USSR/Forestry - Biology and Typology of the Forest.

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10561

Author : Pivnik, S. A.

Inst : -

Title : On The Question of Whether the Cedar (Pinus pumila (Pall.) Rgl.) Bears Fruit.

Orig Pub : Botan. zh., 1957, 42, No 5, 745-751

Abstract : The investigations were conducted in the Prilen' spurs of the Verkhoyansk Mountain Range on model bushes in twelve associations, among them unmixed plantings of creeping juniper of the belt immediately below the timber line (podgol'tsevyy--gol'tsy are "treeless mountain peaks in Siberia"). The periodicity of fruit production (every three to four years) has been determined for the whole of Yakutiya. In years of plentiful fruit production the greatest yield of cones was in the belt just below the timber line--in moss-red bilberry larch forest and in

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PIVNIK, S.A.

Intraspecific relationships in young stands of Pinus pumila (Pall.) Rgl. Bot.zhur. 43 no.3:433-436 Mr '58. (MIRA 11:5)
(Pine) (Reforestation)

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PIVNIK, E.M.

4

10367* (Russian.) Effects of the Sigma-Phase on Long-Time Heat Resistance of Alloys. Vliianie sigma-fazy na dlitel'nuiu zharoprochnost' splavov. E. E. Levin and E. M. Pivnik. *Metallovedenie i Obrabotka Metallov*, no. 2, Feb. 1957, p. 27-31.

18

Study on three Fe-base alloys. Effects of number, size, and distribution of the σ-phase particles on the mechanical properties of the metal.

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PIVNIK, E. M.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

129-2-5/10

AUTHOR: Levin, E.E., Candidate of Technical Sciences and Rivnik, E.M.

TITLE: The Effect of Sigma-Phase on the Long Duration Heat Resistance of Alloys. (Vliyanie sigma-fazy na dlitel'nuyu zharoprochnost' splavov).

PERIODICAL: Metallovedeniye i obrabotka metallov, 1957, No. 2, pp. 27-31, (U.S.S.R.)

ABSTRACT: The results of an investigation of the influence of sigma—phase on the long duration heat resistance of three iron base alloys, the chemical composition of which is given in Table 1, p. 27, are described. No sigma-phase separates out from alloy No. 1 of this Table during ageing, but a carbide-phase of the type $Me_{23}C_6$ and an intermetalide Fe_2Mo separates out. In the second alloy (of this Table) all the typical stages of sigma-phase formation (secondary ferrite and metastable formations) take place; in its initial state it contains about 8% ferrite in addition to austenite. Alloy No. 3 is widely used in the Soviet Union and other countries as a material for rotors, discs etc.; it also tends to form a sigma-phase. On the basis of the investigations

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TITLE: The Effect of Sigma-Phase on the Long Duration Heat Resistance of Alloys. (Vliyanie sigma-fazy na dlitel'nuyu zharoprochnost' splavov).

alloy during short duration tests and also the long duration strength are maintained at a sufficiently high level. Fig. 1 shows the micro-structures of the investigated alloys after hardening and various ageing regimes. Fig. 2 gives the logarithmic dependence "stress-time to failure" of alloys tested at 650°C after hardening. Fig. 3 gives the creep curves determined by long duration tensile strength tests of alloy No. 3 after various conditions of heat treatment. Fig. 4 gives the logarithmic dependence of "stress-time to failure" for No. 3 alloy, tested at 650°C after various heat treatment conditions. Fig. 5 shows the micro-structure of No. 3 alloy after long duration strength tests carried out after ageing for 20,000 hours at 650°C. Table 1 gives the chemical composition of the investigated alloys; Table 2 gives the mechanical properties and the structural characteristics of the alloys before and after ageing; Table 3 gives the results of long duration strength tests (183 to 3684 hours)

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TITLE: The Effect of Sigma-Phase on the Long Duration Heat Resistance of Alloys. (Vliyanie sigma-fazy na dlitel'nuyu zharoprochnost' splavov).

of the alloys at 650°C, and Table 4 the results of tests on alloy No. 3 relating to long duration strength at 650°C.

There are 4 references, 3 of which are Slavic.

ASSOCIATION: Central Boiler and Turbine Institute imemi Polzunov (Tsentral'nyy kotloturbinnyy institut imeni Polzunova)

PRESENTED BY: ---

SUBMITTED: ---

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

LEVIN, Ye.Ye.; PIVNIK, Ye.M.

Deep stabilization as method of increasing the durable heat resistance and plasticity of alloys. Issl. po zharopr. splav. 6:195-200 '60. (MIRA 13:9)

(Nickel alloys--Heat treatment) (Heat-resistant alloys)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

STANYUKOVICH, A.V.; PIVNIK, Ye.M.

Development of intergranular failure at high temperatures and the plasticity of steel. Fiz.met.i metalloved. 10 no.1:106-116 Jl '60. (MIRA 13:8)

1. TSentral'nyy kotloturbinnyy institut im. I.I.Polzunova.
(Heat-resistant alloys--Metallography)
(Plasticity)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

Pivnik Ye.M.

81907

S/126/60/010/01/012/019
E111/E335

18 8200

AUTHORS: Stanyukovich, A.V. and Pivnik, Ye.M.

TITLE: Development of Intercrystalline Fracture at High Temperatures and the Plasticity of Steel

PERIODICAL: Fizika metallov i metallovedeniye. 1960. Vol.10. No. 1. pp 106 - 116

TEXT. The authors describe their work on different metals tested under conditions where intercrystalline fracture predominates. An attempt has been made to differentiate between its various forms and establish a relation between the extent to which it occurs and plasticity. Tests were made at constant deformation speeds, as described previously by Stanyukovich and N.D. Zaytser (Ref 6). Type EI10 pearlitic and two austenitic steels were used. The latter were EI612 (iron chromium-nickel, with tungsten and titanium) and alloy A (high-strength nickel chromium base, with molybdenum, tungsten, aluminium and titanium). All specimens were subjected to standard heat treatment (Table 1). Test temperatures were 450-800 °C, speeds 180, 3.6, 0.4 and 4 x 10^{-2} %/hour. Polished sections of fracture regions were prepared and etched. The number and

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S/126/60/010/01/012/019
E111/E335

Development of Intercrystalline Fracture at High Temperatures and the Plasticity of Steel

overall length of cracks per unit surface were determined and relative elongation and true resistance to fracture were also found. Microstructures obtained under various conditions are shown in Figs. 1, 3 and 6. Relative elongation and number and extent of microcracks as functions of temperature for types EI10 and EI612 are shown in Figs. 3 and 5, respectively for various deformation speeds while Fig. 4 gives the number and extent of microcracks as a function of deformation speed for EI10 steel. For alloy A the mechanical-property results for a constant deformation speed are tabulated (Table 2). Fig. 7 shows the ratio of true resistance to fracture tensile strength as a function of temperature for various deformation speeds. In all alloys formation of intercrystalline cracks at high deformation speeds begins at 450 500 °C. The damage from this cause increases with rising temperature and decreasing deformation speeds. The number, length and shape of cracks depend on the particular conditions. At maximum test speeds and

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81907

S/136/60/010/01/012/019
E111/E335

Development of Intercrystalline Fracture at High Temperatures and the Plasticity of Steel

relatively low temperatures pore cracks are formed when conditions lead to maximum reduction in plastic properties thin and long-sharp-ended cracks are formed. High-temperature plastic properties are directly linked with the extent of damage by intercrystalline disruption. The length of the average crack rises, with decreasing speed and increasing temperature, to a value close to the steel-grain diameter. The increase in plastic properties at test temperatures over 600 650 °C (for pearlitic) and 650 700 °C (for austenitic) is due to reduction in the intensity with which intercrystalline cracks develop. Intercrystalline disruption under these conditions is characterised by the formation of comparatively small thick blunt-ended cracks. There are 7 figures, 2 tables and 11 references 4 Soviet 5 English, 1 French and 1 German.

ASSOCIATION. Tsentral'nyy kotloturbinnyy institut im. I.I. Polzunova (Central Boiler-Turbine Institute im. I.I. Polzunov)

SUBMITTED November 25, 1959

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PRIVATE, YEARS

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Akademiya nauk SSSR. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, tom 6 (Investigations of Heat-Resistant Alloys, Vol. 6) Moscow, 1960. 3,4 p. Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A. A. Baykova. Nauchnyy sovet po probleme zharoprochnykh splavov.

Editorial Board: I. P. Bardin (Deceased) Academician, I. V. Kurdyumov, S. V. Agapov, Corresponding Member, Academy of Sciences USSR (Resp. Ed.), I. A. Oding, L. M. Pavlov, and I. P. Zolin, Candidate of Technical Sciences; Ed. of Publishing House: V. A. Klimov; Tech. Ed.: A. G. Tikhomirova.

PURPOSE: This book is intended for research workers in the field of physics of metals and for metallurgists, particularly those working on heat-resistant alloys.

COVERAGE: This collection of 45 articles deals with various problems in the production of heat-resistant alloys. Special attention is paid to the mechanism of deformation of such metals as aluminum, copper, iron, and nickel. Various defects and failures of metals are analyzed, and means for increasing the heat resistance and plasticity are described. Among the special problems discussed are: electrolytic conductivity of iron-aluminum alloys in the solid state; the mobility of atoms in nickel-iron alloys, depending upon defects of their crystalline structure; the kinetics of change in isolated pores; the irreversible thermal transformation of solid bodies, etc. No personalities are mentioned. References follow each article.

Shashkov, B.S., S.A. Lipatova, and S.S. Khrykina. Resistance of the Metal of the Turbines Against Vanadium Corrosion When Sulfurous Marsts Are Used as Fuel 180

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

SOV/129-59-6-10/15

AUTHORS: Levin, Ye. Ye., Candidate of Technical Sciences and
Pivnik, Ye. M., Candidate of Technical Sciences

TITLE: Sustained High Temperature Strength of Nickel-base Alloys (Dlitel'naya zharoprochnost' splavov na nikelevoy osnove)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov 1959, Nr 6, pp 46-50 + 1 plate (USSR)

ABSTRACT: The aim of the work described in this paper was to determine for nickel-base alloys the relations between the changes in the dimensions of the γ'-particles during ageing and the heat resistance, under equal temperature conditions. Three alloys were investigated with differing Nb and Al contents, two of which also contained boron. The compositions of the investigated alloys were as follows:

No. of alloy	C	Cr	Ti	Nb	Al	B
1	0.06	14.8	1.69	1.5	0.64	-
2	0.03	15.5	1.42	1.28	0.61	0.010
3	0.03	16.4	1.6	1.10	1.3	0.010

Card1/4 The metal from the three melts were quenched in water

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SOV/129-59-6-1[illegible]/15

Sustained High Temperature Strength of Nickel-base Alloys

after heating for five hours at 1100°C and then subjected to the following multi-stage tempering: for two hours at 1000°C, for one hour at 900°C, for two hours at 800°C, for twenty hours at 750°C and for forty-eight hours at 700°C. Such heat treatment ensures favourable plastic properties and a high limit of strength for tens of thousands of hours at elevated temperatures. This can be seen particularly from tensile tests, since the plasticity of materials with inadequate preliminary stabilization is very low. The alloys were tested at 20 and at 700°C directly after heat treatment and also after ageing at 700°C for 6000 hours. The results obtained after 6000 hours ageing are entered in Table 2. The structure of the alloy is shown in Fig 1, plate. Fig 2, plate, shows the block structure of the solid solution obtained by means of electron microscope after ageing at 700°C for 2000 hours. In Fig 4 the changes are graphed of the average dimensions of the particles of the separating out second phase during the process of ageing at 700°C.

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Sustained High Temperature Strength of Nickel-base Alloys

this graph is based on the data entered in Table 1. In Fig 5 the size distribution is graphed of the particles of the second phase forming during ageing at 700°C. In Fig 6 the dependence of the speed of growth of the particles of the second phase on the ageing time is compared with the strength values of the alloys at 700°C. The following conclusions are arrived at:

1. In nickel-base alloys, held at elevated temperatures, the coarsening of the particles of the second phase, which are rejected from the solid solution, proceed with decreasing speed. At a given temperature the speed of this process is determined by the chemical composition of the alloy.
2. The presence of boron accelerates the process of coarsening of the particles of the second phase in alloys of the investigated type (Alloys No. 1 and 2). An increased Al content in the alloy No. 3 brings about a lower average speed of growth of the particles.
3. At each stage of the ageing, particles of various dimensions are present but particles of a certain size are predominant.

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Sustained High Temperature Strength of Nickel-base Alloys

4. A certain relation exists between the speed of growth of the particles and the changes with time of the sustained strength of the alloys. Thus, structural transformations have a considerable influence on the changes in the sustained strength with time.
There are 6 figures, 3 tables and 3 Soviet references.

ASSOCIATION: TsKTI imeni Polzunov

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

LEVIN, Ye.Ye.; PIVNIK, Ye.M.

Methods for developing the microstructure of high-nickel alloys. Zav. lab. 25 no.1:67-68 '59. (MIRA 12:1)

1.TSentral'nyy nauchno-issledovatel'skiy kotloturbinnyy institut I.I. Polzunova.

(Nickel alloys--Metallography)

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SOV/1[illegible]-59 - - [illegible]

13(7)

AUTHOR: Zemzin, [illegible], Pivnik, Ye.M., and Yeroshkin, N.A.

TITLE: Resistance of Austenitic Ferrite Steel of Type Kh1[illegible]N12M2F Built Up by Welding Against the Influence of Heat (Issledovani zharogrochnosti austenitno-ferritnogo naplavlennogo metalla tipa Kh1[illegible]N12M2F)

PERIODICAL: Avtomaticheskaya svarka, 1[illegible], Vol 1[illegible], Nr [illegible], pp [illegible] (USSR)

ABSTRACT: It was demonstrated that the austenitic ferrite steel of type Kh1[illegible]N12M2F (Table 1) built up by welding, which has an initial ferrite content of 2-5%, is able to withstand to a satisfactorily high degree the influence of heat - in spite of the fact that a certain factor occurs - which makes it suitable to be employed for stationary machinery operating at temperatures of up to approximately 600°C under which conditions the life to be expected may be of 1[illegible], [illegible] hours and more. Table 1 shows the chemical analysis and the ferrite content in percent of the steel types welded up. Photographs 1, 2 and 3 show the micro -

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SOV/1[illegible]-59-[illegible]

Resistance of Austenitic Ferrite Steel of Type [illegible] Welding Against the Influence of Heat

sections of the different types of steel with vari[illegible] ferrite content in percent. Table 2 indicates the impact resistance as a function of the ferrite content and the thermic treatment after welding [illegible]. The specimens to be examined are subjected at vari[illegible] temperatures to a process of accelerate[illegible] and tested for their impact resistance. Results [illegible]). Table 4 summarizes the data on heat resistance of steel of various ferrite content by the method of impact resistance tests carried out after thermic treatment. The author comes to the conclusion that a ferrite content of [illegible] as a maximum and exposure to temperature of [illegible] more than [illegible] guarantees practically an unlimited [illegible] for the steel. There are 4 tables, 1 diagrams and [illegible] references, [illegible] of which are Soviet and 1 English.

ASSOCIATION: ZKTI im. I. I. P[illegible]va

SUBMITTED: October 24, 1958

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

LEVIN, Ye.Ye.(Leningrad); PIVNIK, Ye.M.(Leningrad)

Stabilization as method of increasing the high temperature plasticity of high alloy metals. Izv. AN SSSR. Otd. tekh. nauk. Met.i topl. no.5:86-95 S-O '60. (MIRA 13:11)
(Alloys--Heat treatment) (Metals at high temperature)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

18(7) S/V 32-25-1-2[illegible]

AUTHORS: Levin, Ye. Ye., Livnik, Ye. M.

TITLE: Method for the Development of Microstructure of Nickel Alloys With High Nickel Content (Metodika vyyavleniya mikrostruktury vysokonikelevykh splavov)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 67 - 68 (USSR)

ABSTRACT: Reagents and picklings for metallographic ground sections were selected to be used in the investigations dealing with nickel alloys. Experiments were made with alloys of the nimonik type (titanium and niobium contents), alloy 1, as well as with samples consisting of high-resisting chrome-nickel alloys (with Mo, W, Al, and Ti) on nickel base, alloy 2, and with about 35% nickel - alloy 3. The samples were hardened before investigation and most of them stored for aging. The following reagent (A) was chosen for developing the structure of the solid solution: $CuSO_4$ - 2 g, HCl (1.[illegible]) - 1[illegible] ml, H_2SO_4 (1.84) - 1 ml, water - 1[illegible] ml (Fig 1). A development

Card 1/2 of the second phase, which separates on the decomposition of

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Method for the Development of Microstructure of Nickel [illegible]
Alloys With High Nickel Content

the solid solution was attained by electrolytic pickling in the following solution (B): $CuSO_4$ - [illegible] g, H_2SO_4 ([illegible] - 5ml, citric acid - 10 g, water - 1 l (Fig [illegible]). Pickling of [illegible] alloys was carried out by three different solutions, the composition of which is also specified (Figs 3,4,5). In all experiments the standard rectifiers of the VSA-5 type served as a current source. The sample was the anode and a stainless steel lamina served as cathode. There are 5 figures and 1 Soviet reference.

ASSOCIATION: Tsentral'nyy [illegible] tel'skiy kotloturbinnyy institut im. I. I. Polzunova (Central Scientific Research Institute for Boiler Turbine Sciences I. I. Polzunov)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, MA.

PA 50T10

USSR/Electricity Dec 1947
Power Plants, Electric
Coal, Pulverized

"Automatic Feed for Coal Crushing Mills," M. A. Pivnik, Engr, 1 p

"Elektricheskiye Stantsii" No 12

Frequent cleaning needed for the inlet and outlet tubes and pipes. During cleaning period crushing mills must be stopped or slowed down thus lowering average performance of mill. In 1947 author developed method of automatic feeding of these mills with culm. Conducted experiments on Type Sh-16 mill. Method greatly cuts down need for frequent cleaning, and makes possible personnel requirements. 50T10

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PIVNIK, E.M.

USSR

270/115 669.15.26.24

Isothermic Ferrite Transformations in Highly Alloyed Austenite-Ferrite Steel

Zh. tekh. Fiz. 25(1), 135-143 1954

E.M. Pivnik

U.S.S.R.

Deals with certain fundamental regularities in the kinetics of the occurrence of sigma-phase in ferrite zones. Steel with high Cr (18-20%) and Ni(6-10%) content and additionally alloyed with Mo, W and Ti (1-2% of each element), water quenched at 1,200 deg.C and then baked at 650-700 deg.C was studied. Experimental results and the behaviour of sigma-phase and its effect upon mechanical properties of steel are discussed in some detail. (Bibl. 7)

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PIVNIK, S.A.

Vegetation of the Verkhoyansk Range spurs of the Lena Valley region opposite the mouth of the Vilyuy River. Rast. Krain. Sev. SSSR i ee osv. no.3:128-153 '58. (MIRA 11:10)
(Verkhoyansk Range--Forest ecology)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, S.A.

Characteristics of the root system of Pinus pumila Rgl. in Yakutia. Izv. Sib. otd. AN SSSR no.8:134-138 '58. (MIRA 11:10)

1. Biologicheskiy institut AN SSSR.
(Verkhoyansk range--Pine) (Roots (Botany))

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, S.A.

Fruiting of the dwarf pine Pinus pumila (Pall.) Pgl. Bot. zhur. 42 no.5:745-751 My '57. (MIRA 10:6)

1. Botanicheskiy institut im. V.L. Komarova Akademii nauk SSSR, Leningrad.

(Verkhoyansk Range--Pine)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

LEVIN, Ye.Ye., kandidat tekhnicheskikh nauk.;PIVNIK, Ye.M., kandidat tekhnicheskikh nauk.

Effect of sigma-phase on the sustained heat-resistance of alloys. Metalloved. i obr. met. no.2:27-31 F '57. (MLRA 10:4)

1. TSentral'nyy kotloturbinnyy institut imeni Polzunova.
(Iron alloys--Metallography) (Heat-resistant alloys)

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FD-2413

USSR/Metallurgy - Ferrite transformation

Card 1/2 Pub. 153-17/21

Author : Pivnik, Ye. M.

Title : Isothermal transformation of ferrite in highly alloyed austenite-ferr alloys

Periodical : Zhur. tekh. fiz. 25, 135-143, Jan 1955

Abstract : The author presents the results of an investigation of a number of high-alloy makes of steel in the austenite-ferrite class, which contain a com paratively small percentage of ferrite (5-30%). In the process of pro-longed isothermal soaking at temperatures of 650-850° the ferrite decays with the formation of the sigma phase. A number of published works (N. I. Korneyev, Izv. Sekt. fiz.-khim. nauk, 20, 1950) are devoted to the condi-tions for the formation of the sigma phase and to the properties of steel containing the sigma phase. The present article is devoted to certain peculiarities in principle and to the kinetics of the formation of the sigma phase in ferritic regions. The work was conducted in the Metal-graphic Laboratory of the Central Scientific Research Boiler and Tur Institute. The author acknowledges the guidance of Ye. Ye. Levin.

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PIVNIK, Ye.M.

Isothermic transformation of ferrite in high austenite-ferrite steel alloys. Zhur.tekh.fiz.25 no.1:135-143 Ja '55. (MLRA 8:3)
(Steel alloys) (Austenite) (Ferrite)

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Pivnik, E.M.

Isothermal transformation of ferrite in high-alloy austenitic-ferritic steels. E. M. Pivnik. *Zhur. Tekh. Fiz.* 25, 135-43(1955).—An aq. soln. of 4% $KMnO_4$ and 4% NaOH used electrolytically with a c.d. of 0.5-0.7 amp./sq. cm. for 2-5 sec. (the specimen being the cathode) colors the σ phase red and ferrite and austenite different shades of blue. With the use of other reagents (described) it is possible to color σ red, austenite yellow, and ferrite blue. Their use permits following the mechanism of isothermal decompn. under a microscope. Quenching at 1150° and holding at 700° first causes pptn. of short streaks of austenite in ferritic grains. This ferrite, α', has a space lattice of 2.922 A. as compared with 2.876 A. for the untempered one, α; this suggests enrichment of the α iron with alloying elements. On further holding, the α' phase decomposes with the formation of a new finely dispersed phase σ' appearing first at the grain boundaries of α' and γ grains and then extending inside of the α' grains. Debye diagrams show in its presence other lines than those for σ and for carbide $M_{23}C_6$. On further heating or on raising the temp. the dispersed phase is transformed into σ, though occasionally their simultaneous presence was noted. The finely dispersed σ' acts as nuclei for σ formation and is an intermediate product between α' and σ. Increasing Mn and C helps to stabilize σ', so that holding at [illegible]° even for 10,000 hrs. does not coagulate it into σ-phase.

J. D. Gat

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, E.M.

USSR.

7086* Isothermal Transformation of Ferrite in High-Alloy Austenitic-Ferritic Alloy. Izotermicheskoe prevrashchenie ferrita v vysokolegirovannykh austenito-ferritnykh splavakh. (Russian.) E. M. Pivnik. Zhurnal Tekhnicheskoi Fiziki, v. 25, no. 1, Jan. [illegible]

Quenching and aging effects; formation of δ phase. Tables, diagrams, micrographs. 7 ref.

M

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PHASE I BOOK EXPLOITATION SOV/5559

Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 423 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed. I.F. Kas'min; Editorial Board: I.P. Bardin, Academician, G.V. Kurdyumov, Academician, S.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.N. Pavlov, and I.F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.

Lenskaya, K.A., E.N. Kiryeyeva, and E.S. Sorokina. EI 736 Austenitic Steel 19

Khimushin, F.F., I.I. Shevenkova, L.Ye. Prostakova, E.K. Kerzin, and E.E. Lyubimsky. EI695 and EI 695A Heat-Resistant Chromium-Nickel-Titanium Steel 25

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Lebedev, T.A., T.F. Marinets, and A.I. Zefirov. Study of the Endurance Limit of Metals by Means of Registering the Fatigue Curve 141

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

Pivnik Ye M.

Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 623 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Ilinov; Tech. Ed.: I.P. Kan'shin; Editorial Board: I.P. Bardin, Academician, S.V. Kurdyumov, Academician, N.V. Agayev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Odling, I.N. Pavlov, and I.P. Zadin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. The paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.

Lenskaya, K.A., S.M. Kiryeva, and E.S. Sorchakova. EI 736 Austenitic Steel 19

Khimushin, F.F., L.A. Shevnakova, L.Ya. Pomakarnov, E.K. Kornich, and B.E. Krasilnikov. EI695 and EI 696 Heat-Resistant Chromium-Nickel-Titanium Steel 25

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Ryakov, B.I. On the Problem of Studying the Kinetics of Structural Changes and Properties in One Specimen Within a Wide Temperature Range 75

Nikolov, V.P. On the "Angular" Relationship Between the Structure and Properties of Intercrystalline Boundaries. 78

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Lagunov, I.N., and V.K. Syrotelnov. Creep Strength of Steam Superheating Pipes of Austenitic Steel in a State of Complex Stress 107

Lagunov, I.N., and L.I. Fedotova. Effect of Temperature Variations on Creep Strength of EI 847 Steel 113

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Terekhov, V.S. Artificial Aging of the EI847 Alloy under Thermal Cycle 126

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Kuznetsov, P.V. Regularities of the Thermokinetic Change in Austenite and the Problem of the Development of New Alloys 137

Lebedev, T.A., V.S. Marinets, and A.I. Yefremov. Study of the Endurance Limit of Metals by Means of Registering the Fatigue Curve 143

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

S/125/60/000/03/005/018
D042/D001

25(1)

AUTHORS: Zemzin, V.N., Pivnik, Ye.M., Yeroshkin, N.A.

TITLE: The Heat Resistance of Austenito-Ferrite Weld Metal

PERIODICAL: Avtomaticheskaya svarka, 1960, Nr 3, pp 37-45

ABSTRACT: Results of an investigation are given, in which the effect of different types of heat treatment including long-time ageing on the impact resistance and durability of weld metal was determined. The data include the composition of the electrodes and the weld metal obtained (Table 1): "KTI-5" ("1Kh19N12M2F") alloying the weld with molybdenum and vanadium; "TsT-15" ("1Kh19N9B") adding niobium; "KTI-12" ("2Kh19N9MB") adding molybdenum and niobium. The "KTI-5" and "TsT-15" are used for welding austenite steel in power engineering [Ref 1-4] and the "KTI-12" electrodes, recently developed at TsKTI, produce weld metal with higher heat-resistance and sufficiently stable properties when the content of ferrite phase is in the range between 0 and 9%. The composition of the electrodes and weld metal was given in %: "KTI-5" - 0.06-0.14 C, 0.24-0.48 Si,

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S/125/60/000/[illegible]
[illegible]

The Heat Resistance of Austenito-Ferrite Weld Metal

2.85-4.87 Mn, 1658-22.7 Cr, 10.5-12.5 Ni, 1.5[illegible] Mo, 0.3-0.6 V, 0.08 S and 0.02 P, ferrite content [illegible] 0.08 C, 0.3 Si, 2.1 Mn, 19-5-20.4 Cr, 9.7 Ni, 0.9[illegible] Nb, [illegible] and 0.011P, ferrite content 3-7; "KTI-12" - 0.10-0.19 C, 0.65 Si, 2.8 Mn, 17.2-21.3 Cr, 9.2-10.5 Ni, 0.9-1.2 Mo, 0.65-1.0 Nb, 0.01 S and 0.015 P, ferrite content 0-1[illegible]. The following conclusions were made: 1) Austenite ferrite up to 5% of α) weld metal of the "KTI-5" and "TsT-15" electrodes had sufficiently stable properties under working conditions for 100,000 hours in 600° C. "KTI-12" electrode weld metal with molybdenum and niobium with up to 9% of α phase may be used in work temperatures up to 650° C. In case austenization is employed after welding, the "TsK-15" electrode weld metal may also work in 650°; 2) In the process of long time aging in working temperatures, the structure changes, i.e. the α-phase decomposes and the formation of dispersed σ and

Card 2/4

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S/125/60/000/03/005/018
D042/D001

The Heat Resistance of Austenito-Ferrite Weld Metal

$Me_{23}C_6$ takes place, and σ also forms after a longer period of time. The intermediary dispersed phases are sufficiently stable. 3) Under conditions of long-time ageing in 600 [illegible], the initial and the stabilized state of weld metal are equivalent; 4) Austenization after welding markedly raises the stability of properties during the ageing of metal welded by the "TsT-15" electrodes; 5) The approximate durability limits in 10^5 hours, determined by direct extrapolation of test results (Table, p 45), was between 12.5 and 18.0 kg/mm² in 600 and 650° C; 6) The sigma formation in "KTI 5" weld metal in ageing did not impair the durability and maintained high plasticity when ruptured. There are 5 tables, 4 graphs, 2 sets of photographs and 9 Soviet references.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut im. Polzunova, TsKTI (Central Boiler and Turbine Institute imeni Polzunov)

Card 3/4

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D042/D001

The Heat Resistance of Austenito-Ferrite Weld Metal

SUBMITTED: July 13, 1959

Card 4/4

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, YE. M.

E-5

Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6652

Author : Pivnik, Ye.M.
Title : Formation of Phase in High-Alloyed Austenitic Alloys

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 3, 531-537

Abstract : Report on the results of an investigation of the structural transformation in the process of aging at 650 -- 800° of certain high-alloyed austenitic alloys with an iron base. The structural transformations in the alloys were investigated with the aid of a special method of metallographic analysis, comprising color transformation, X-ray structural analysis, and determination of the magnetic susceptibility. As a result of the investigations performed, the process of formation of the σ phase in γ-solid solution has been clarified. The formation of the σ phase in the γ-solid solution first precedes the seperation of the carbide $Me_{23}C_6$, and then precedes the formation of the intermediate phases χ and σ'. Particles of the σ' phase are the nucleation centers of the σ

Card : 1/2

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Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies E-

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6652

Author : Pivnik, Yu.L.

Title : Formation of Phase in High-Alloyed Austenitic Alloys

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 3, 531-537

Abstract : Report on the results of an investigation of the structural transformation in the process of aging at 650 -- 600° of certain high-alloyed austenitic alloys with an iron base. The structural transformations in the alloys were investigated with the aid of a special method of metallographic analysis, comprising color transformation, X-ray structural analysis, and determination of the magnetic susceptibility. As a result of the investigations performed, the process of formation of the σ phase in γ-solid solution has been clarified. The formation of the σ phase in the γ-solid solution first precedes the separation of the carbide $Me_{2\alpha}C_6$, and then precedes the formation of the intermediate phases α and σ'. Particles of the σ' phase are the nucleation centers of the σ

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Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies

Abs Jour : Ref Zhur - Fizika, [illegible]

phase. The dimension and the number of the forming particles of the σ phase depend on the stability of the σ'-phase particles. The dimensions and amounts of the produced σ-phase particles depend on the stability of the σ' phase particles. The formation of the σ-phase causes a reduction in the impact viscosity, this being due to the small strength of the grain boundaries, along which the formation of the σ-phase is most intense. The formation of the σ-phase contributes also to a reduction in the plastic properties. The degree of reduction of plastic properties depends on the chemical composition of the alloy, on the dispersion, and on the shape and on the placement of the particles of the σ-phase in the solid solution.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK, Ye. M.

Shushpanov, L. I. and Pivnik, Ye. M. - "Certain problems in the kinetic disintegration of carbon monoxide," Sbornik nauch.-tekhn. rabot (Vsesoyuz. nauch. inzh.-tekhn. o-vo metallurgov, Leningr. ots-niye), Issue 1, 1949, p. 61-74, - Bibliog: 8 items

SO: U-5240, 17, Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNIK-GRIBOVA, S.A.; TIKHOMIROV, B.A.

"Pinus pumila (Pall.) Rgl.; materials on its study and economic utilization" by G.E.Grosset. Reviewed by S.A.Pivnik-Gribova, B.A.Tikhomirov. Bot. zhur. 45 no.10:1555-1557 O '60.

(MIRA 13:11)

1. Botanicheskiy institut imeni V.L.Komarova Akademii nauk SSSR, Leningrad.

(Siberia--Pine) (Grosset, G.E.)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNITSKIY, A.S.; TONKONOGIY, A.V.

Calculation of slag film in cyclone furnaces. Izv.AN Kazak SSR. Ser. tekh.i khim.nauk no.1:107-115 '63. (MIRA [illegible])

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNITSKIY, K.K.; TORGOV, I.V.

Synthesis of 2-ethylene ketal of anti-trans-Δ^{10}-dodecahydrophenanthrene-2, 5, 8-trione. Izv.AN SSSR.Otd.khim.nauk no.6: 1080-1087 Je '61. (MIRA 14:6)

1. Institut khimii prirodnykh soyedineniy AN SSSR.
(Ethylene) (Phenanthrenetrione)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

SOV/79-2 [illegible]

AUTHORS: Korobitsyna I K, Pivnitskiy, K. K. Yur'yev, Yu F

TITLE: Letter to the Editor (Pis'mo v redaktsiyu)
Synthesis of Mono and Diketones of the Tetrahydropyrane Series From Furanidones 3 and Furanidindiones-3 4 (Sintez mono- i diketonov ryada tetragidropirana iz furanidonov-3 i furanidindionov-3 4

PERIODICAL: Zhurnal obshchey khimii 1959 Vol 29, Nr 2 pp 691-693 USSR

ABSTRACT: In continuation of their earlier works and basing on the experience gathered concerning the synthesis and properties of the ketones of the tetrahydrofuran series, the authors carried out the reaction of diazomethane solved in ether (7.2 g, 21 % excess) with 20 g [illegible] tetramethylfuranidone-3 in ether in the presence of methanol (at 20° 3 days) and obtained 3.95 g 2,2,6,6-tetramethyl tetrahydropyrone 3 (18 % yield, calculated for the ketone introduced into the reaction, besides traces of 2,2,6,6-tetramethyl tetrahydropyrone 4 (Scheme 1) (Ref 2) On the action of diazomethane upon 2,2,5,5-tetraalkyl furanidindione-3,4, the β-diketones forming with the extension of the cycle are methylated by diazomethane, which fact leads to the methyl ethers of 2,2,5,5-tetraalkyl tetrahydropyrandiones-3,5 Thus, for example, the methyl ether of 2,2,6,6-tetramethyl tetrahydropyrandione-3,5

Card 1/2

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Letter to the Editor Synthesis of Mono and Diketones of the Tetrahydropyrane Series From Furanidones-3 and Furanidindiones-3,4 SOV/79-29-[illegible]

was obtained on the action of diazomethane solved in ether upon 2,2,5,5-tetramethyl furanidindione 3,4 The hydrolysis of the product with hydrochloric acid yielded 2,2,6,6-tetramethyl tetrahydropyrandione-3,5, which is soluble in alkali lye The reaction carried out according to scheme 2 of α-diketones with diazomethane is described by only one example in publications, namely in the case of camphor quinone (Ref 3).- There are 3 references, 2 of which are Soviet

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: October 29, 1958

Card 2/2

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

KOROBITSYNA, I.K.; PIVNITSKIY, K.K.

Reactions of 3-dihydrofuranone with diazomethane. Zhur. ob. khim. 30 no.12:4008-4016 D '60. (MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet.
(Furanone) (Methane)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

KOROBITSYNA, I.K.; PIVNITSKIY, K.K.

3,4-Tetraalkylfuranidinediones in the synthesis of 3,5- tetraalkyltetrahydropyrandiones. Zhur. ob. khim. 30 no.12:4016-4023 D '60. (MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet.
(Furandione) (Pyrandione)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNITSKIY, K.K.; TORGOV, I.V.

Synthesis of 2-ethylene ketal of anti-trans-Δ^{10}-dodecahydro-2,5,8-phenanthrenetrione. Izv. AN SSSR Otd. khim. nauk no.10:1902 O '60.

1. Institut khimii prirodnykh soyedineniy Akademii nauk SSSR.
(Phenanthrenetrione)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

USSR : Farm Animals. Domestic Fowls.

U-10

Abs Jour : Ref Zhur - Biologiya, No 16, 1957, 72166

Author : Eremeev, G., Pivnitskaya, E., Meleshkina, M.

Title : The Preincubation Treatment of Eggs.

Orig Pub : S. Kh. Sibiri, 1956, No 5, 57-61

Abstract : One of the causes of the increased loss of embryos in eggs kept for a long time is the decrease in them of CO_2 ga. To compensate this loss in the preserved eggs, the eggs previous to incubation were put into a hermetic vesse. with 15-70 percent CO_2 for 2½-4½ hours. Tests showed that the action of CO_2 on the chick, duch and turkey embroys stimulates the embryo development, increases the percentage of live birds, and makes the chicks more harmonious. In production tests and in incubating stations, the preincubation treatment of the chick, duch and turkey eggs produces the best results in tests with chicken eggs. The need for high concentration of CO_2 and the necessity of the immediate insertion of eggs into the incubator after the treatment are emphasized.

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5.3610

S/020/60/132/01/33/064
B011/B126

AUTHORS: Korobitsyna, I. K., Pivnitskiy, K. K.

TITLE: A New Method of Synthesizing 2,2,6,6-Tetraalkyl-tetrahydropyrandiones-3,5

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 1, pp. 127-129

TEXT: The authors report on the reaction between diazomethane and monoketones and α-diketones of the furanidine series. The action of diazomethane on 2,2,5,5-tetramethylfuranidone-3 produces 2,2,6,6-tetramethyl-tetrahydropyrone-3 with impurities of 2,2,6,6-tetramethyl-tetrahydropyrone-4. The best results, that is a yield of 55-58% of the main product, are obtained from the reaction in situ of N-nitroso-N-methylurethane or of N-nitroso-N-methylurethylan. The structure of 2,2,6,6-tetramethyl-tetrahydropyrone-3 (a representative of the previously almost unknown class of tetrahydro-β-pyrones) was shown through its oxidation with selenium dioxide to Δ^4-2,2,6,6-tetramethyldihydropyrone-3-ol-4. The benzyl rearrangement of the latter led to 3-oxy-2,2,5,5-tetramethylfuranidyl--3-carboxylic acid. The same acid was gained from 2,2,5,5-tetramethylfuranidone-3. The authors have shown in a series of examples that the reaction of tetraalkyl-

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A New Method of Synthesizing 2,2,6,6-Tetraalkyl-tetrahydropyrandiones-3,5

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B011/B126

furanidinediones-3,4 with an ethereal solution of diazomethanes leads to an expansion of the ring between 2 carbonyl groups. The resulting 2,2,6,6-tetra-alkyl-tetrahydropyrandiones-3,5 are enolized under the given conditions, and methylated by the diazomethane excess. As a result, methyl esters of 2,2,6,6-tetraalkyl-tetrahydropyrandiones-3,5 are produced as reaction products. The esters of the enol form are easily hydrolized by heating with HCl, and give 2,2,6,6-tetraalkyl-tetrahydropyrandiones-3,5. This reaction can serve as a convenient way of synthesizing the above-mentioned β-diketones of the tetra-hydropyrane series. These β-diketones easily form different derivatives. The ultraviolet absorption spectra of the methanolic solutions of 2,2,6,6-tetra-alkyl-tetrahydropyrandiones-3,5 and their methyl esters show an intensive peak in the region of 250 mμ (logε 4.6). This shows a far-reaching enolization of these β-diketones in methanolic solvents and also the lack of an inner molecu-lar hydrogen bond. It follows from the ultraviolet spectra of these β-diketones that they are fully enolized in methanol, and fully dissociated in an NaOH solution. The authors believe that only the hemiketal form of 2,2,5,5-tetraalkyl-furanidinediones-3,4 is capable of reacting with diazomethane under expansion of the ring, since they exist in this form in methanolic solutions. The authors explain that a higher yield of the methyl ester of 2,2,6,6-tetramethyl-tetra-

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A New Method of Synthesizing 2,2,6,6-Tetraalkyl-tetrahydropyrandiones-3,5

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B011/B126

hydropyrandione-3,5 results both with and without the addition of 10% methanol, and that the furanidinedione-3,4 that was used is very hygroscopic (Ref. 3), and always contains a certain quantity of the hydrate form, which has a structure analogous to the hemiketal form. The authors thank Professor Yu. K. Yur'yev for his interest in their work. There are 2 tables and 4 references, 2 of which are Soviet.

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

PRESENTED: January 4, 1960, by A. N. Nesmeyanov, Academician

SUBMITTED: January 3, 1960

Card 3/3

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PIONOTEL, V.L.

USSR.

Cryoscopic investigation of complex formation in solutions of binary systems. II. The system [illegible] [illegible] E. Ya. [illegible] [illegible] J. Gen. Chem. U.S.S.R. [illegible] (Engl. translation).—See C.A. 48, 31[illegible].

N. L. M.

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PIVINUTEL, V.L.

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Study of complex formation in solutions of ternary systems by the methods of physicochemical analysis. VII. The system aluminum bromide-ethyl ether-benzene. E. Ya. Gorenbein and V. L. Pivinutel (Vet. Inst., Kiev.). *Zhur. Obshchei Khim.* 27, 20-2(1957); cf. *C.A.* 49, 2925d; 51, 23721.—The viscosity, elec. cond., and d., of cross sections of the $AlBr_3$-Et_2O-C_6H_6 system were detd. at 15, 20, and 25°. It was established that 2 complex compds. are formed $AlBr_3 \cdot Et_2O$ and $Al_2Br_6 \cdot Et_2O$. J. Roytar Leach

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

GORENBEYN, Ye.Ya.; PIVNUTELI, V.I.

Physicochemical analytic techniques for investigating complex formation in solutions of ternary systems. Part 7: The system $AlBr_3$-$(C_2H_5)_2O$-C_6H_6. Zhur. ob. khim. 27 no.1:20-22 Ja '57. (MLRA 10:6)

1. Kivevskiy veterinarnyy institut i Institut fiziologii Akademii nauk Ukrainskoy SSR.

(Complex compounds) (Systems (Chemistry))
(Aluminum bromides) (Ethyl ether)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

Pivnutel, V. L.

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AUTHORS: Gorenbeyn, YE. YA., and Pivnutel, V. L.

TITLE: Study of Complex Formation in Solutions of Ternary Systems by Physico-Chemical Analysis Methods. Part 7. The $AlBr_3$ - $(C_2H_5)_2O$ - C_6H_6 System (Issledovaniye kompleksoobrazovaniya v rastvorakh troynykh sistem metodami fiziko-khimicheskogo analiza. VII. Sistema $AlBr_3$ - $(C_2H_5)_2O$ - C_6H_6)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 20-22 (U.S.S.R.)

ABSTRACT: The electrical conductivity, viscosity and density of the $AlBr_3$-$(C_2H_5)_2O$-C_6H_6 system corresponding in molar ratio of 0.15 to benzene (used as the solvent) were investigated at 15, 20 and 25°. The measurement of electrical conductivity involved certain difficulties due to the reaction of the ether with the bromine. In cases where the $AlBr_3$ contained Br traces, electrical conductivity increased sharply. The relation between viscosity, specific electrical conductivity and concentration of $AlBr_3$ components is presented in Fig. 1, the points shown on the axes of the ordinates pertain to the characteristics of binary systems. As is evident from the curves on this diagram, the increase in $AlBr_3$ concentration is followed by a sudden increase in specific electrical

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conductivity forming a maximum near the 50 mol/%, then comes a sharp drop which passes the minimum and a rapid rise and the formation of a second maximum. The first maximum corresponds approximately to the composition of the compound, whereas the minimum gives no proof of the existence of a compound of different composition in this solution.

Relation between the density of solutions and concentration of $AlBr_3$ and $(C_2H_5)_2O$ components is presented in Fig. 2. The break in the lines corresponds to the equimolecular composition of the given compound. According to density and cryoscopic study data and judging by the first maximum of the conductivity curve, aluminum bromide and ethyl ether form a compound of the $AlBr_3 \cdot (C_2H_5)_2O$ composition, and an $AlBr_6 \cdot (C_2H_5)_2O$ compound according to the viscosity and second conductivity maximum data. On the basis of results obtained, it was concluded that $AlBr_3$ with ether forms not one complex compound, but two, the structures of which were described in another report. The authors quote a rule which states: if two substances, which are not electrolytes, form two or more compounds, then the viscosity curves will

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PIVNUTEL, V.L.

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Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
General and Physical Chemistry

Cryoscopic investigation of complex formation in solutions of ternary systems. II. The system aluminum bromide-ethyl ether-benzene. B. Ya. Gorenbein, V. L. Pivnutel and I. A. Gerasun. *Zhur. Obshchei Khim.* 23, 644-7 (1953); cf. *C.A.* 47, 7817.—The f.p. depression was measured for 2 isomolar concn. series (0.05 and 0.15 mols. of $AlBr_3$ plus $(C_2H_5)_2O$ per mol. of benzene as solvent). In each series, the min. depression occurred at the equimolar point; this indicated the formation of $AlBr_3.(C_2H_5)_2O$. Assocn. was evidenced by mol. wts. at the min. of 481.8 (0.05 series) and 602.5 (0.15 series). Elec. cond. is a function of assocn. The complex is readily prepd. by extn. after formation in benzene; the reaction is exothermic. R. D. Misch

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PIVNYAK, I.G., kand. vet. nauk

Production of fodder terramycin and biomycin by means of surface fermentation on grain. Veterinariia 36 no.11:71-74 N '59 (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhivotnovodstva.
(Terramycin) (Aureomycin) (Feeding and feeding stuffs)

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PIVNYAK, I.G.

Temperature conditions for biosynthesis of oxytetracycline. Antibiotiki 8. no.1:27-29 Ja'63. (MIRA 16:6)

1. Laboratoriya antibiotikov (zav. - prof. N.I.Leonov) Vsesoyuznogo nauchno-issledovatel'skogo instituta zhivotnovodstva.
(TERRAMYCIN) (TEMPERATURE—PHYSIOLOGICAL EFFECT)

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PIVNYAK, I G

USSR/Diseases of Farm Animals - Diseases Caused by Bacteria and Fungi. R.

Abs Jour : Ref Zhur - Biol., No 6, 1958, 26302

Author : Pivnyak, I.G.
Inst : -
Title : Treatment of Sheep Experimentally Infected by Brucellosis with Biomycin and Anti-Brucellosis Serum.

Orig Pub : Veterinariya, 1957, No 9, 47-50

Abstract : Thirteen sheep were inoculated by the virulent species of Brucella bovis with a 200 milligram microbic bodies dosage. On the 17th day after the inoculation all sheep gave a positive reaction to brucellosis. The treatment of nine sheep (four sheep were used as controls) was conducted in two stages: biomycin was administered six times, and antibrucellosis serum was administered three times. Each animal received 7.5 grams (50 mg/kg) of biomycin and 20 milligrams of serum.

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USSR/Farm Animals. Swine. -2

Abs Jour: Ref Zhur - Biol., No. 22, 19[illegible], 1011[illegible]

Author : Leonov, [illegible].I., [illegible]ivryak, I.G., Obraztsova, A.S.

Inst : All-Union Scientific Research Institute of Animal Husbandry.

Title Studying the Effective Utilization of Biomycin and Its Dry Waste in Meat Fattening of Swine.

Orig Pub: Bypl. nauchno-tekhn. i. form. Vses. n.-i. in-t zhivotnovodstva, 1957, No. 2 (4), 19-21

Abstract: When swine received 140 g of dry biomycin waste per each kg of live weight for a period of 4 months with their daily rations, they showed weight gain increases of 16-18 percent, and a 6 percent better utilization of fodder as compared to controls which did not receive antibiotics.

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[illegible]

[illegible]AK, I.G., kandidat veterinarnykh nauk

Aureomycin and antibrucellar serum for treating sheep experimentally infected with brucellosis. Veterinariia 34 no.9:47-[illegible]57 (MIRA 10:9)

1. Vsesoyuznyy institut eksperimental'noy veterinarii
(Aureomycin) (Brucellosis--Preventive inoculation)

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HIVNYAK, I. G.

HIVNYAK, I. G.: "A study of the therapeutic effect of biomycin and hyperimmune sera in brucellosis of animals." All-Union Inst of Experimental Veterinary Medicine, Min Agriculture USSR. Moscow, 1956. (Dissertation for the Degree of Candidate in Veterinary Sciences)

Source: Knizhnaya letopis' No. 29 1956 Moscow

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013411

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVNYAK, I.G.

Biosynthesis of oxytetracycline at increased temperatures.
Antibiotiki 7 no.1:23-27 Ja '62. (MIRA 15:2)

1. Laboratoriya antibiotikov (zav. - prof. N.I.Leonov) Vsesoyuznogo nauchno-issledovatel'skogo instituta zhivotnovodstva.
(OXYTETRACYCLINE)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001341

PIVONKA, Alois

"Hydraulic drives of multipurpose machines and automatic lines" by A.S. Bron and Z.E. Tartakovskij [Tartakovskiy, Zh.E.]. Reviewed by Alois Pivonka. Stroj vyr 10 no.12:635 '62.

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