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PHASE I BOOK EXPLOITATION SOV/4535

Vsesoyuznyy sovet nauchno-tekhnicheskikh obshchestv

Mezhkristallitnaya korroziya i korroziya metallov v napryazhennom sostoyanii (Intercrystalline and Stress Corrosion of Metals) Moscow, Mashgiz, 1960. 358 p. 3,000 copies printed.

Ed.: I.A. Levin, Candidate of Technical Sciences; Ed. of Publishing House: I.I. Lesnichenko, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on Metalworking and Instrument Making (Mashgiz): V.V. Rzhevinskiy, Engineer; Editorial Board: I.A. Levin, Candidate of Technical Sciences (Chairman), V.P. Batrakov, Candidate of Technical Sciences, V.M. Nikiforova, Candidate of Technical Sciences, and A.V. Turkovskaya, Candidate of Technical Sciences.

PURPOSE: This collection of articles is intended for technical personnel concerned with problems of corrosion of metals.

COVERAGE: The collection contains discussions of intercrystalline corrosion of stainless steels and stress corrosion of carbon steels, low-alloy and stainless steels, and light-weight and nonferrous alloys. The tendency of steels of various composition and system to corrode under certain conditions is discussed and the nature of corrosion and corrosion cracking is analyzed. No personalities are mentioned. Most of the articles are accompanied by bibliographic references, the majority of which are Soviet.

Gurvich, L. Ya., Candidate of Technical Sciences, and K.A. Khvoshchevskaya, Engineer. Rapid Method of Determining the Tendency of Stainless Steels Toward Intercrystalline Corrosion 162

III. STRESS CORROSION OF STAINLESS STEELS

Ryabchenkov, A.V., Doctor of Chemical Sciences, Professor, and V.M. Nikiforova, Senior Scientific Worker, Candidate of Technical Sciences. The Role of Electrochemical Factors in the Process of Corrosion Cracking of Austenitic Steels 178

[illegible], D. Ya., Candidate of Technical Sciences, and T.M. Mikhaylova, Junior Scientific Worker. Effect of Various Environments on the Stress Corrosion of Austenitic Steels at Supercritical Parameters 198

Slomyanskaya, P.B., Candidate of Technical Sciences (Deceased). Stress Corrosion of Metals in Sulfur-Removing Equipment Sciences) 210

[illegible], M.G., I.R. Kryanin, Candidates of Technical Sciences, and S.I. Babushkina. Resistance of Hydroturbine Blade Steels to Cavitation Erosion Depending Upon the Uniformity of Structure and Mechanical Properties 217

IV. STRESS CORROSION OF CARBON STEELS AND LOW-ALLOY STEELS

Ashogin, P.P., Candidate of Technical Sciences. Corrosion Cracking of High-Strength Steels 251

Kristal', M.M. Corrosion Cracking of Welding Equipment Made of Carbon Steel in Sodium Nitrate Solutions 251

Titov, V.A., Candidate of Technical Sciences. The Effect of Hydrogen Diffusion of Steel on Its Endurance 257

A.G. Vaysburg, R.A. Averina and V.I. Kazarina, Engineers, participated in this study prepared at the Moskovskiy Institut stali im. I.V. Stalina (Moscow Steel Institute imeni I.V. Stalin)

Fedotov, G.G., Engineer, S.I. Vol'fson, Kh. I. Cheskis, Candidates of Technical Sciences, and L.D. Zakharochkin, Engineer. Cracking of Safety Valve Springs in Contact With Unstabilized Gasolines and Liquefied Gases 269

152

Card 4/9

KRISTAL, M.M.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

SHVARTS, G.L., kand.tekhn.nauk; KRISTAL', M.M., inzh.

New articles on the corrosion and protection of steels. Khim. mash. no.2:47-48 Mr-Ap '60. (MIRA 13:6)
(Steel--Corrosion)

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33549
S/135/62/000/002/003/010
A006/A101

1.2300 1573

AUTHORS: Krutikov, A.N., Candidate of Technical Sciences, Arest, T.V., Engineer, Kristal, M.M., Engineer

TITLE: On the problem of welding and corrosion resistance of steel-copper, steel-bronze and steel-brass bimetals

PERIODICAL: Svarochnoye proizvodstvo, no. 2, 1962, 15 - 17

TEXT: The authors investigated the possibility of using steel, clad with copper and its alloys, in chemical machinebuilding. Since the use of bimetals presents some advantages over coating the steel with copper and its alloys, the weldability of steel-copper, steel-bronze and steel-brass bimetals was investigated and a welding technology was developed. Copper, brass and bronze can be gas- and arc-welded. In the latter case metal or carbon electrodes are used; for argon-arc welding non-consumable electrodes should be employed and automatic welding should be performed with a submerged arc. A carbon-arc is widely used for welding brass. Welding copper and bronze with a metal electrode is performed on d-c of reverse polarity, and brass on d-c of direct polarity; argon-arc welding is in all cases performed on current of direct polarity. Conditions of weld-

Card 1/3

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33549
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On the problem of welding ...

ing copper depend on the number of factors including thickness, shape and dimensions of the parts to be welded, chamfering of the edges, etc. Since copper is prone to porosity and embrittlement, and has high heat-conductivity, tight and plastic joints can not be obtained when welding copper that contains over 0.01% oxygen. When welding 10 mm thick bimetals, the edges should be asymmetrically double V-shaped, and the chamfering angle should be 30-35°. High-quality weld joints are produced by automatic submerged-arc welding with an electrode wire of 2 mm in diameter, having the same composition as the base-metal. Mechanical and corrosion tests of the weld joints yielded the following results: in welding copper and brass, considerable grain growth takes place in the weld-adjacent zone; grain growth is not observed in bronze. Bronze and brass do not yield a distinct fusion boundary, which is very distinct in copper. In manual welding of a cladding layer a non-ferrous metal does not penetrate into the steel. In automatic welding the steel is overheated in a number of cases, grain growth takes place and Widmannstaetten structure is formed. In the case of intensified welding conditions, non-ferrous metals penetrate into the steel seam to a depth of 2 - 3 grains. Corrosion tests showed that the corrosion resistance of steel-copper and steel-brass bimetals exceeds that of the base metal. The corrosion resistance of welds with a bronze cladding layer in acetic acid, after manual arc welding, is equal to that

Card 2/3

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33549
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A006/A101

On the problem of welding ...

of the base metal. It is somewhat lower after automatic welding. Bronze welds are sometimes prone to structural corrosion; if proper welding conditions have been selected this defect is not observed. There are 5 tables, 5 figures and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: NIIKhIMMASh

X

Card 3/3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

34451
S/184/62/000/002/002/004
D041/D112

18.8310
11.1160

AUTHORS: Shapiro, M.B., Kristal', ~~M.M., Mosk~~vin, N.I., Makarov, V.M., Engineers

TITLE: High-strength acid-proof steel for chemical machine building

PERIODICAL: Khimicheskoye mashinostroyeniye, no. 2, 1962, 26-31

TEXT: The authors tested X15H9Yu (Kh15N9Yu) high-strength austenite-martensite steel at NIIKhIMMASh in order to determine its suitability for use in machines operating in aggressive media. The effect of thermal treatment on the structure of the steel, on its mechanical properties and on its resistance to corrosion in various media was investigated. Cold treatment increased the hardness. After normalizing from 1,000°C, the steel had a purely austenite structure; reducing the normalizing temperature to 950°C and below, increased the amount of carbides and changed the position of the martensite point and the quantity of formed martensite. After cold treatment and aging, the hardness values were higher at all temperatures. The

Card 1/3

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D041/D112

High-strength acid-proof ...

maximum strength was obtained after the aging of steel which was previously normalized at 750-800°C and cold-treated. The maximum strength was obtained after aging at 450-475°C for 1 hour. Maximum plasticity and toughness were obtained by aging at 350°C, whereby the strength was still high enough. The corrosion tests were carried out on sheets, forgings, a rod and welded specimens of various thicknesses, heat-treated at various normalizing and aging temperatures. The maximum corrosion rate was observed in HNO_3 as well as in an acid solution of copper-vitriol after aging at 550°C. An increase of the aging time from 1 to 5 hours (at 475°C) showed that the corrosion resistance decreased in 65-% HNO_3 by approximately 3 times. The greatest corrosion resistance was observed after tempering at 1,000 to 1,100°C, when the steel had an almost pure austenite structure; the greatest intercrystalline corrosion was observed after normalizing at 760°C. The steel was successfully used in some test machines developed by the NIIKhIMMASh, and is recommended for the valve plates of compressors; further research is needed before the steel can be used for casings of machines. There are 7 figures, 2 tables, and 3 references; 1 Soviet-bloc and 2 non-

Card 2/3

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D041/D112

High-strength acid-proof ...

Soviet-bloc. The two references to English-language publications read as follows: I. Halbig, O.B. Ellis, Observation on the corrosion resistance of tough strength stainless steels for aircraft, "Corrosion", v. 14, no. 8, 1958; W.K. Boyd, H.A. Pray, "Corrosion", v. 13, no. 6, 1957.

Card 3/3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

SHAPIRO, M.B., inzh.; KRISTAL', M.M., inzh.; SOVETNIKOVA, Ye.N., inzh.; BELINKIY, A.L., kand.tekhn.nauk

Heat treatment of electrically welded Kh18N9T steel pipe. Metalloved. i term. obr. met. no.8:26-29 Ag '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya.
(Pipe, Steel--Welding)
(Steel alloys--Heat treatment)

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EWP(q)/EWT(m)/RDS

ACCESSION NR: AR3001635 S/0137 [illegible] 004/I081/I081

SOURCE: RZh. Metallurgiya, Abs. 4I444

AUTHOR: Shapiro, M. B.; Moskvin, N. I.; Kristal', M. M.; Makarov, V. M.

TITLE: A new high-strength stainless steel

CITED SOURCE: Vses. n.-i. i konstrukt. in-t khim. mashinostr, no. 40, 1962, 62-79

TOPIC TAGS: stainless steel, heat treatment, Kh15Kh9Yu, C, Si, Mn, Cr, Ni, S, P, Al, austenite, martenite, Kh15N9Yu, argon-arc welding, welding

TRANSLATION: Research has been conducted on the effect of heat treatment on the mechanical properties and corrosion resistance of precipitation hardening steel Kh15Kh9Yu containing 0.05-0.09% C, 0.34-0.[illegible]% Si, [illegible]% Mn, 14.3-16.03% Cr, [illegible] Ni, 0.[illegible]-0.07% S, 0.012-0.08% P, and [illegible] Al. This material shows much promise for chemical machine building. Kh15Kh9Yu steel is of the austenite-martensite class and has an austenitic structure after normalizing at 975-1,[illegible]°C; and it can also be subjected to various production operations. As a res

Card 1/2

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ACCESSION NR: AR3001635

a result of cold treatment at -70°C, the steel undergoes a martensite transformation and contains up to 70% martensite which increases its strength appreciably. When aged at 350-500°C, tensile strength increases from 115 to 140 kg/mm². With [illegible] heat treatment the mechanical properties of Kh15Kh9Yu are changed as [illegible] tensile strength, 100 to 150 kg/mm²; [illegible] yield strength, 90 to 140 kg/mm²; [illegible] to [illegible], reduction in area [illegible] and impact strength, up to [illegible] mm. Optimum combination of mechanical properties is obtained after [illegible] as follows: normalizing at [illegible]°C, cold treatment at -70°C for [illegible] hours at 350-500°C. Resulting properties are: tensile [illegible] > [illegible] kg/mm²; yield strength > 90 kg/mm²; δ-elongation > 12%; reduction [illegible] > [illegible]; and impact strength > 5 kg-meters/cm². Steel Kh15Kh9Yu is not inclined to intercrystalline corrosion after this heat treatment and can be welded by argon-arc using electrode wire made of the same steel. After a complete heat treatment cycle, strength factor of a welded seam is 0.9 higher.

L. Kozlikova

DATE ACQ: 20 May 63 SUB CODE: ML ENCL: 00

Card 2/2

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

ACCESSION NR: AR4041618 S/137/64/000/005/I070/I070

SOURCE: Ref. zh. Metallurgiya, Abs. 5I408

AUTHOR: Kristal', M. M.; Adugina, N. A.; Sovetnikova, Ye. N.

TITLE: Investigation of corrosion stability of electric welded pipes of steel 1Kh18N9T

CITED SOURCE: Tr. Vses. m.-i konstrukt. in-t khim. mashinostr., vy'p. 45, 1963 3-15

TOPIC TAGS: corrosion, corrosion stability, electric welded pipe, welded pipe, steel pipe, intercrystalline corrosion, 1Kh18N9T steel

TRANSLATION: Electric welded pipes of steel 1Kh18N9T in state of delivery do not possess inclination to intercrystalline corrosion if they are prepared from tape not inclined to this form of disintegration. Stability of pipes against intercrystalline corrosion after tempering at 650° can be ensured by additional cold rolling of pipes and use for their manufacture of tape with content $C < 0.08\%$ and ratio of $Ti:C \geq 5$. Electric welded pipes do not possess increased inclination to

Card 1/2

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ACCESSION NR: AR4041618

corrosion cracking, as compared with seamless pipes. In a number of aggressive media (in which steel 1Kh18N9T is passively stable) corrosion stability of electric welded pipes can be increased by means of hardening from 1050 - 1150°, ensuring dissolution of δ -ferrite and carbides. Pipes prepared by high frequency welding possess higher stability against intercrystalline corrosion than pipes prepared by Ar-arc welding.

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Card 2/2

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

S/276/63/000/003/001/006
A004/A127

AUTHORS: Shapiro, M. B., Kristal', M. M., Belinskiy, A. L., Sovetnikova, Ye. N.

TITLE: Investigating the heat treatment of electrically welded tubes of 1Х18Н9Т (1Kh18N9T) steel

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 3, 1963, 58, abstract 3B246 ("Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr.", 1962, no. 40, 80 - 100)

TEXT: The investigations were carried out on tubes 25, 32, and 38 mm in diameter, wall thickness 2 mm, manufactured by the Moscow and Nikopol Tube Plants. The tubes were made from strip by argon arc welding on special tube welders. The chemical composition of the tube metal was (in %): C - 0.09, Cr - 18.2, Ni - 10.25, Ti - 0.59. The studies comprised the effect of furnace heating at 1,050 and 1,150°C with 8 and 4 minutes holding respectively and stabilizing annealing at 870 and 920°C with 2 hours holding, and also the effect of h-f current induction heat-

Card 1/2

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[illegible] the structure, hardness and corrosion resistance of the same [illegible] welding seam. Simultaneously the [illegible] the heating temperature [illegible] the tendency of the tubes to corrosion cracking was investigated. As a result of the investigations carried out it was found that corrosion resistance of welded tubes in nitric acid was obtained by the following treatment: Heating at 1,150°C for four minutes, [illegible] in water, upon which the δ-ferrite content in the weld is reduced from [illegible] 12% to nearly 0, while concentration nonhomogeneities of the seam metal structure are eliminated to a considerable extent. Analogous results may be obtained in hardening by means of h-f current induction heating up to 1,250 - 1,300°C with 5 - 6 seconds holding. Heat treatment increases the corrosion resistance of electrically welded tubes and makes it possible to extend their [illegible] ability in chemical machine building. There are [illegible] figures and [illegible] references.

T. Kislyakova

[Abstracter's note: Complete translation]

Card 2/2

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L 10709-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD

ACCESSION NR: AP3001648 S/0063/63/008/003/0283/0293 58

AUTHOR: Dyatlova, V. N.; Kristal', M. M.; Shvarts, G. L. (Cand. of technical sciences)

TITLE: Stainless steels as materials for chemical equipment

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 8, no. 3, 1963, 283-293

TOPIC TAGS: austenite-martensite stainless steels, Kh17N7Yu, Kh15N9Yu, Kh17N5M3, Kh15N8M2Yu, corrosion resistance of steels

ABSTRACT: Authors describe a new type of stainless steels which are high-strength, age-hardenable steels of the austenite-martensite class. Special feature of these steels is the ability of the martensite transformation to take place in them under the effect of low temperatures or cold plastic flow and increase in their strength [illegible] the subsequent aging process. American steels of this type, particularly [illegible] used in the aviation industry, are discussed briefly. [illegible] Soviet steels of [illegible] which are discussed include the Kh17N7Yu, [illegible], Kh17N5M3 and [illegible]. Chemical composition and structure are given in various tables and

Card 1/2

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figures. Article then compares the corrosion resistance of these steels to 2Kh13, 1Kh18N9T and Kh17N2 steels. Comparative data is shown in tables. Article concludes by comparing the new steels with other types of steels with respect to mechanical properties, structure and corrosion resistance. Orig. art. has: 8 figures and 8 tables.

ASSOCIATION: none

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

DYATLOVA, V.N.; KRISTAL', M.M.; SHVARTS, G.L., kand. tekhn. nauk

Stainless steels as material for chemical equipment. Zhur. VKHO 8 no.3:283-293 '63. (MIRA 16:8)

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[illegible] followed by water [illegible] refrigeration at [illegible] for 2 hr, and aging of 350—400C. Orig. art. has: 3 figures and 1 table.

[illegible]

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L 1677-66 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/HW/JG/WB

ACCESSION NR: AP5011357 UR/0365/65/001/002/0137/0149
620.193

56
43
B

AUTHOR: Shvarts, G. L.; Kristal', M. M.

TITLE: Metals and alloys for the chemical industry

SOURCE: Zashchita metallov, v. 1, no. 2, 1965, 137-149

TOPIC TAGS: corrosion resistant metal, alloy steel

ABSTRACT: About 200 types of carbon and alloyed steels as well as copper, nickel, aluminum, titanium, lead, and alloys based on these metals are presently being used in the chemical industry for equipment, machines and piping. The physical and chemical properties of some of these materials are described and recommendations are given for improving these properties. Comparative data on the corrosion resistance of various types of alloyed steels are given in table 1 of the Enclosure. Particular attention is given to Ni-Mo and Ni-Cr-Mo alloys. Data on the corrosion resistance of some of these alloys are given in table 2 of the Enclosure. Some consideration is given to the use of bimetals in order to economize on scarce materials such as titanium. Orig. art. has: 5 figures, 3 tables.

Card 1/5

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ACCESSION NR: AP5011337

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya (All-Union Design Scientific Research Institute of Chemical Machinery)

44,55

SUBMITTED: 17Oct64 ENCL: 03 SUB CODE: MM, IE

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Card 2/5

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Table 1

Medium	Concentration %	Temperature °C	Corrosion rate, mm/year Kh15N9Yu	Kh17N5M3	2Kh13	Kh18N10T
Nitric acid	10	40	0	0.001	0.007	0.001
		boiling	0.02	0.012	0.34	0.01
	30	20	0.000	0.000	0.000	0.000
		40	0.000	0.000	0.001	0.000
		boiling	0.11	0.10	1.68	0.03
	65	boiling	1.1	--	8	0.7
Phosphoric acid	20	boiling	0.03	0.01	2.6 *, †	0.004
	55	80	--	0.01	--	--
Magnesium chloride	42	135	0.01 *	0.01 *, †	0.03 †	0.04 §

*--point corrosion; †--corrosion cracking; §--pitting corrosion

Card 3/5

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6

Table 2

Medium	Concentration %	Temperature	Corrosion rate, mm/year		
			N70M27F (EP496)	Kh15N55M16V (EP375)	Okh23N28M3D3T (EI943)
Sulfuric acid	10	95°	0.106	0.274	0.071
		boiling	0.034	0.376	0.611
	20	95°	0.081	0.307	0.204
		boiling	0.027	0.966	2.32
	30	95°	0.081	0.344	0.45
		boiling	0.025	1.721	1.59
	40	95°	0.175	0.354	0.42
		boiling	0.033	4.100	1.10
	50	95°	0.106	0.417	0.37
		boiling	0.294	11.55	333.9
	65	95°	0.025	2.46	24.9
		boiling	4.18	78.35	52.8

Card 4/5

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ACCESSION NR: AP5011357

ENCLOSURE: 03

Medium	Concentration %	Temperature	Corrosion rate, mm/year		
			N70M27F (EP496)	Kh15N55M16V (EP375)	Okh23N28M3D3T (EI943)
	78	95°	0.009	0.87	0.62
		boiling	15.9	12.8	9.0
	93	95°	0.02	0.17	0.22
		boiling	7.30	4.35	2.54
Hydrochloric acid	5	70°	0.19	0.42	--
		95°	--	2.37	--
		boiling	0.128	4.47	--
		70°	0.20	0.59	--
	10	95°	--	2.67	--
	15	boiling	0.27	--	--
	21	boiling	<0.5	--	--
Hydrofluoric acid	10	70°	0.18	0.23	--
		95°	0.91	1.17	--
	30	70°	0.75	0.80	--
		95°	1.67	0.92	--

Card 5/5

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

L 24729-66 EWT(d)/EWT(m)/EWP(c)/EWA(c)/EWT(v)/EWP(t)/EWP(k)/EWP(b)/EWP(1)/ETC(m)-6
ACC NR: AT6015856 SOURCE CODE: UR/0314/65/000/008/0005/0008

IJP(c) JD

AUTHOR: Shvarts, G. L. (Candidate of technical sciences); Kristal', M. M. (Candidate of technical sciences); Dyatlova, V. N. (Engineer)

ORG: none

TITLE: New structural materials for chemical machine building

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 8, 1965, 5-8

TOPIC TAGS: low alloy steel, corrosion resistance, titanium, stainless steel, steel, annealing, sheet metal, corrosion rate, alloy, dispersion hardening, ferritic steel, austenitic steel, martensitic steel, titanium alloy, solid solution/09G2S low alloy steel, 16GS low alloy steel, St 3 steel, 00Kh18N10 stainless steel, Kh18N10T steel, 08Kh17N16M3T steel, N70M27F alloy, Kh15N55M16V alloy, Kh15N9Yu steel, Kh16N6 steel, Kh17N5M3 steel, VT1-1 titanium, OT4 titanium alloy

ABSTRACT: In recent years the low-alloy steels 09G2S and 16GS have begun to be used to make chemical apparatus in addition to the usual quality steels. In comparison with steel St. 3, these steels are characterized by increased strength (15-20%) and by a wide operating temperature range (-40 to +420°C).

An effective method of increasing corrosion resistance in nitric acid and in other corrosive media is to decrease the carbon content to 0.03% or less. Presently, stainless steel grade 00Kh18N10 containing up to 0.04% is being put into GOST 5632-61. Production is starting on sheet steel grade 00Kh18N10 containing less than 0.03% C. Studies have indicated that the corrosion

Card 1/3 UDC: 669.018.9:66.02.001.8

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L 24729-66

ACC NR: AP6015856

5

resistance of steel containing less than 0.03% C, after annealing and subsequent heat at 650 C for 1 hour in fuming 65% nitric acid, is 0.25 mm/year whereas steel Kh18N10T containing 0.08% C it is 2 mm/year.
The production of steel OKh17N16M3T (EI580) containing less than 0.06% C has started. This steel has a pure austenitic structure.

Alloy N70M27F is recommended for joining large-size weldments when the thickness of the weld metal is less than 5 mm, on the basis of the studies conducted at NIIkhimmash together with TsNIIChM. The corrosion rate of this alloy in hydrochloric acid in 1-37% concentrations at 20 and 70°C and in boiling solutions containing up to 10% HCl does not exceed 0.2 mm/year, and in the 15-21% concentration range it amounts to less than 0.5 mm/year. In sulfuric acid the alloy is stable under the following conditions: at 20 and 70°C in the 10-83% concentration range; at 95°C in the 10-30 and 50-93% concentration ranges, at boiling temperature in the 10-40% concentration range (rate of corrosion does not exceed 0.1 mm/year). Alloy N70M27F is stable in phosphoric acid at 77-115% concentrations and up to 140-200°C (in relation to the acid concentration).

The Ni-Cr-Mo alloy Kh15N55M16V is sufficiently stable in sulfuric acid in all concentrations at 70°C and in the 10-55 and 78-93% ranges at 95°C and in boiling sulfuric acid up to 10% concentration (rate of corrosion is 0.1-0.5 mm/year). In concentrations above 10% the alloy is unstable in boiling sulfuric acid.

Card 2/3

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ACC NR: AP6015856

A need for materials combining high corrosion resistance and strength led to the introduction of dispersion hardened steels Kh15N9Yu, Kh16N6, and Kh17N5M3 of the austenitic-martensitic class as well as of steels of the austenitic-ferritic class for chemical machine building. The corrosion rate of steels Kh15N9Yu and Kh16N6 in 65% fuming nitric acid is 1.6 mm/year and 1.54 mm/year respectively.

A deficiency of austenitic-ferritic class steels is their tendency, higher than in austenitic steels, to selective structural corrosion in media containing the chlorine ion, sulfuric acid and maleic acid.

Of the various grades of titanium produced domestically technically pure titanium VT1-1 and low-alloy titanium alloy OT4 are used in chemical equipment building.

The corrosion resistance of titanium in a number of corrosive media can be improved by alloying it with other elements forming solid solutions with titanium. Workers at the Institute of Physical Chemistry AN USSR and NIIkhimmash, together with the State Institute of Rare Metals, established that in solutions of hydrochloric acid an alloy of titanium and 0.2% Pd has a considerably lower corrosion rate than titanium; it is stable in 30% HCl at room temperature, in 10% HCl at 90°C, and in 5% HCl at boiling temperature. Orig. art. has: 3 figures. [JPRS]

SUB CODE: 13, 11, 20 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 001

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

L 32800-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP6012587 (N) SOURCE CODE: UR/0314/66/000/004/0036/0039

AUTHOR: Kristal', M. M.; Khalizova, V. N.; Adugina, N. A.

ORG: none

TITLE: Corrosion resistance of two-layer metals

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 4, 1966, 36-39

TOPIC TAGS: corrosion resistance, bimetal, corrosion resistant metal

ABSTRACT: The paper reports on tests of corrosion resistance of 1) two-layer metals with the cladding layer made of the steels Kh18N10T, Kh18N12M2T, Kh17N13M2T, and OKh23N28M3D3T, 2) weld joints of the same sheets; and 3) two-layer metals with the cladding layer made of Ni, M3S copper, No. 0.4 bronze, and L90 brass. In all the cases the corrosion resistance of the two-layer metal proved to be approximately equal to the corrosion resistance of the pure metal even when the joints exhibited fissures of transcrystallite character. Some of the investigations were carried out at the NIIkhimmash in conjunction

Card 1/2 UDC: 621.9-419:620.193.001.5

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

L 32800-66

ACC NR: AP6012587

with the Institute of Metallurgy and Concentration, AN KazSSR (Institut metallurgii i obogashcheniya AN Kazakhskoy SSR). Orig. art. has: 2 formulas and 2 tables.

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 003

Card 2/2 mgs

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

BARABOSHKIN, V.; KRISTAL', V.

Radio-controlled ship model. Voen.znan. 31 no.12:25 D '55. (MLRA 9:5)

(Ship models--Radio control)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL', R.; STAROVEROV, M., master; SERGEYEV, K.

Planning problems and the analysis of labor productivity and wages. Muk.-elev. prom. 29 no.3:13-14 Mr '63. (MIRA 16:9)

1. Zamestitel' nachal'nika Mordovskogo respublikanskogo upravleniya khleboproduktov (for Kristal'). 2. Cherepanovskiy mel'nichnyy kombinat Novosibirskoy oblasti (for Staroverov). 3. Nachal'nik Normativno-issledovatel'skoy laboratorii po trudu Gor'kovskogo upravleniya Khleboproduktov (for Sergeyev).

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL', V., inzh.

Automatic control of submarine model. Voen. znan. 35 no.12:34 D '59 (MIRA 13:3)

1. Tsentral'naya laboratoriya morskogo modelizma Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR.
(Submarines--Models)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

USSR/ Miscellaneous - Communications

Card 1/1 Pub. 133 - 9/23

Authors : Zakharov, M. V., Chief Engineer, and Kristal, V. B., Economist-Engineer, Telephone Exchange, Trunk Line Department

Title : Methods of calculating the volume of work (telephone exchange connections) produced over trunk lines

Periodical : Vest. svyazi 11. page 16, Nov 1954

Abstract : A method of calculating the volume of work of telephone exchange lines is discussed. The standard unit for the method of calculation is a channel-hour-kilometer unit, i.e., the amount of telephone-exchange work produced over a certain line should be calculated on the basis of the number of channels in the line, number of actual hours of telephone connections, and the overall length of the channels in kilometers.

Institution: .....

Submitted: .....

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KOTELNIKOV, A. V.

"Synthesis and Investigation of Some Nitro Substitues in Thioesters."
Cand Chem Sci, Tomsk Polytechnic Inst, Tomsk, 1954. (KZhKhim, No 17, Sep 54)

SO: Sum 432, 29 Mar 55

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALEV, P.V.; KRISTALEVA, L.B.

Colorimetric determination of nitrites by 1-phenyl-3-methyl pyrazolone and its derivatives. Trudy TGU 145:73-76 '57. (MIRA 12:3)

1.Kafedra analiticheskoy khimii Tomskogo gosudarstvennogo universiteta imeni V.V. Kuybyshev.
(Nitrites) (Pyrazolinone) (Colorimetry)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

LEL'CHUK, Yu.L.; SKRIPOVA, L.L.; KRISTALEV, P.V.

Photocolorimetric determination of small amounts of cobalt in nonferrous ores by -nitroso- -naphthol. Izv. Sib. otd. AN SSSR no. 11:63-70 '60. (MIRA 14:1)

1. Tomskiy politekhnicheskiy institut.
(Cobalt—Analysis) (Naphthol)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALEV, P.V.

Phenothiazine as a reagent for nitrites. Trudy kom. anal. khim. 11:306-308 '60. (MIRA 13:10)

1. Tomskiy politekhnicheskiy institut im. S.M.Kirova.
(Phenothiazine) (Nitrites)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KULEV, L.P.; KRISTALEV, P.V.

Photometric determination of esters of p-nitrothiobenzoic acid.
Trudy kom. anal. khim. 11:457-459 '60. (MIRA 13:10)

1. Tomskiy politekhnicheskiy institut.
(Benzoic acid)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KULEV, L.P.; KRISTALEV, P.V.

Synthesis and study of some nitro-substituted thioesters. Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.3:429-432 '61. (MIRA 14:10)

1. Tomskiy politekhnicheskiy institut imeni S.M. Kirova, kafedra tekhnologii krasiteley i lekarstvennykh veshchestv. (Esters)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALEV, P. V.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

P. V. Kristalev and L. B. Kristaleva, Yu. L. Lel'chuk and others; L. F. Zaichko, M. S. Zakharov, and V. F. Yankanskas. Methods for determining iron (10^{-5} to 10^{-6}%), boron (5×10^{-5}%) and phosphorus (10^{-6}%), also antimony in tin.

(Zhur. Anal. khim 19 No.6, 1964 p.777-79)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALEVA, L. B.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

P. V. Kristalev and L. B. Kristaleva, Yu. L. Lel'chuk and others; L. F. Zaichko, M. S. Zakharov, and V. F. Tankanskas. Methods for determining iron (10^{-5} to 10^{-6}%), boron (5×10^{-5}%) and phosphorus (10^{-6}%), also antimony in tin.

(Zhur. Anal. khim. 19 No. 6, 1964 p. 777-79)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALEV, P.V.; KRISTALEVA, L.B.

Colorimetric determination of nitrites by 1-phenyl-3-methyl pyrazolone and its derivatives. Trudy TGU 145:73-76 '57. (MIRA 12:3)

1. Kafedra analiticheskoy khimii Tomskogo gosudarstvennogo universiteta imeni V.V. Kuybyshev.
(Nitrites) (Pyrazolinone) (Colorimetry)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALEVA, L.B.; KRISTALEV, P.V.

Extraction-photometric determination of trace amounts of arsenic. Trudy Kom.anal.khim. 14:279-280 '63. (MIRA 16:11)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALEVA, L.B.

Colorimetric determination of impurities in arsenic. Zav.lab. no.11: 1294-1295 '59. (MIRA 13:4)

1.Tomskiy gosudarstvennyy universitet im. V.V.Kuybysheva.
(Arsenic-- Analysis)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

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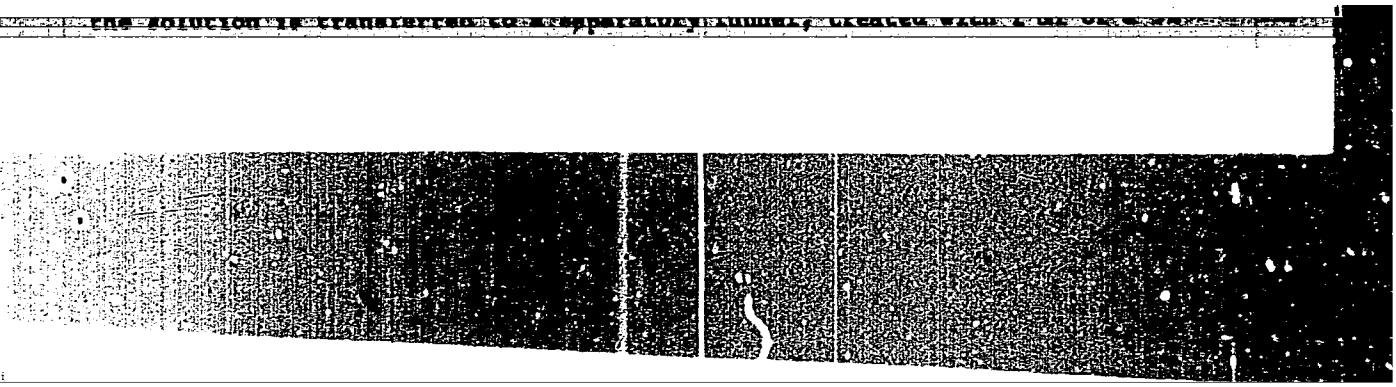

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APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALNVSKIY, A. (Pos. Goryachiy Klyuch, Krasnodarskogo kraya).

Photographs on simple paper. Sov. foto 18 no.5:54 My '58.
(Photography--Printing processes) (MIRA 11:5)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALINSKAYA, M.M., insh.

Studying Transbaikalia coal for the all-Union classification of brown coal. Nauch.trudy KuzNIIUgleobog. no.2:183-190 '64.

(MIRA 17:10)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KHODOV, G.B., insh.; KRISTALINSKIY, B.S., insh.

Treatment of tungstate-copper contacts by means of high-frequency currents. Mashinostroenie no.6:86-87 N-D '65. (MIRA 18:12)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALINSKIY, Vladimir Yakovlevich; IVANOV, A.I., redaktor ; AKHMEDOV, V.M., redaktor izdatel'stva; KONYASHINA, A., tekhnicheskiy redaktor

[Fire prevention measures in the construction and use of buildings on stock farms] Protivopozharnye meropriiatiia pri stroitel'stve i ekspluatatsii zhivotnovodcheskikh pomeshchenii. Moskva, Izd-vo M-va kommun. khoz. RSFSR, 1956. 63 p. (MLRA 10:5)
(Fire prevention) (Stock and stockbreeding)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

[illegible] method for determination of [illegible]

[illegible] R. [illegible] Merenkova [illegible]

[illegible] Markov Lebkov Inst. [illegible] Rotterdam [illegible]

[illegible] gent metric and [illegible]

[illegible] gen-metric [illegible]

[illegible] method [illegible]

[illegible] OH while heating [illegible] acidity

[illegible] and titrate with [illegible] $HgNO_3$

[illegible] and diphenylcarbazine. As control

[illegible] KMnO[illegible] in a weakly alk. [illegible] until a

[illegible] Acidify with excess HNO_3

[illegible] disappearance of pink color, and titrate

[illegible] The proposed analysis takes 40 min. and

[illegible] 1.5 hrs. The results compare well.

M. Hoseh

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALL, Z.B.

The VSM separator-clarifyer. Biul.tekh.-ekon.inform. no.1:42-43 '59.
(Separators (Machines)) (MIRA 12:7)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALL, Z.B.

Modernization of the VSB and VSV yeast separators. Gidroliz.i lesokhim.prom. 13 no.4:27-29 '60. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prodovol'-stvennogo mashinostroyeniya.
(Yeast) (Separators(Machines))

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALL, Z.B.

New yeast separator. Gidroliz. i lesokhim. prom. 14 no. 1:31-32 '61. (MIRA 14:1)

1. VNIEKIprodmash.

(Yeast)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

ZUYKOV, V.Ya.; IVANOV, A.M.; KRISTALL, Z.B.; MAKSIMOVA, N.K.; NOVIKOV, O.P.; POTKOV, G.A.; KRIKUNOV, A.Ye., red.; SELEKHOV, P.M., red.; SHUVALOVA, N.S., red.; ZORINA, G.V., red.; VINOGRADOV, Ye.A., tekhn. red.

[Liquid separators for the food industry; handbook-catalog]Separatory zhidkostnye dlia pishchevoi promyshlennosti; katalog-spravochnik. Moskva, 1962. 86 p. (MIRA 15:10)

1. Moscow. TSentral'nyy institut nauchno-tekhnicheskoy informatsii mashinostroyeniya. 2. Vsesoyuznyy nauchno-issledovatel'skiy i eksperimental'no-konstruktorskiy institut prodovol'stvennogo mashinostroyeniya (for Zuykov, Ivanov, Kristall, Maksimova, Novikov, Potkov).

(Separators (Machines))

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALL, Z.B.

Effect of the magnitude of the interplate clearance on the process occurring in the drum of a yeast separator. Izv.vys.ucheb.zav.; pishch.tekh. no.3:79-81 '62. (MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy i eksperimental'no-konstruktorskiy institut prodovol'stvennogo mashinostroyeniya, laboratoriya separatorostroyeniya.
(Separators (Machines)) (Yeast)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALL, Z.B.

Testing the VSB-M-type modernized yeast separator. Gidroliz.i lesokhim.prom. 15 no.8:24 '62. (MIRA 15:12)

1.Vsesoyuznyy nauchno-issledovatel'skiy i eksperimental'no-konstruktorskiy institut prodovol'stvennogo mashinostroyeniya.
(Yeast) (Separators (Machines))

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALL, Z.B.

Clogging of the spouts of yeast separators. Gidroliz. i lesokhim. prom. 15 no.7:24-25 '62. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy i eksperimental'no-konstruktorskiy institut prodovol'stvennogo mashinostroyeniya.
(Separators(Machines)) (Yeast)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KHAVKIN, Yu.A.; MOROZOVA, M.A.; KRISTALLINSKAYA, N.S.

Purification of diphtheria toxin by the gel filtration method. Vop. med. khim. 9 no.5:526-529 S-O '63. (MIRA 17:1)

1. Tashkentskiy nauchno-issledovatel'skiy institut vaktsin i syvorotok.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTALLOVICH, G.A., Inzh.

Improvement of the safety valves of a reducing and cooling system. Energetik 12 no.5:23 My '64. (MIRA 17:6)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

VADKOVSKIY, N.D.; LEBEDEVA, V.P.; AL'TANI,).S.; GILEVICH, F.N.; BABIKOV, V.A.; SAVOSH, I.A.; DOKTOROVICH, M.Kh.; starshiy inzh.; KRISTAL'NAYA, Ye.F., starshiy inzh.; MALINA, K.N., starshiy tekhnik; NEFEDOVA, V.I., tekhnik; LEBEDEVA, V.P., otv.red.; NOVIKOVA, Ye.S., red.; KARABILOVA, S.F., tekhn.red.

[Standard plan for stations of 600 and 1200 watt wire broadcasting centers] Tipovoi proekt stantsii radiotransliatsionnykh uzlov moshchnost'iu 600 i 1200 vt. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 103 p. (MIRA 13:11)

1. Moscow. Gosudarstvennyy institut po izyskaniyam i proyektirovaniyu sooruzheniy svyazi.
(Radio stations) (Wire broadcasting)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KOTLYAR, V.N., prof.; KABANOVA, Ye.S.; KRISTAL'NYY, B.V.

[The condition of uranium sources in capitalist countries and methods employed in prospecting for uranium] O sostoianii syr'evoi bazy urana v kapitalisticheskikh stranakh i metodike poiskovykh rabot na uran. Pod red. V.N.Kotliara. Moskva, Izd-vo Akad.nauk SSSR, 1956. 57 p. (MIRA 11:1)

(Uranium)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KOTLYAR, V.N.; KRISTAL'NYY, B.V.

Industrial-type titanium deposits in capitalist countries. Gor. zhur. no.4:69-73 Ap '57. (MLRA 10:5)
(Titanium ores)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KOTLYAR, V.N.; TITOVA, N.A.; KRISTAL'NYY, B.V.; SHEVCHENKO, G.A., tekhn.red.

[Geology, and uranium and thorium resources in capitalist countries; collected studies] Voprosy geologii i syr'evoi bazy urana i toriia kapitalisticheskikh stran; sbornik statei. Moskva, Vses.in-t nauchn.i tekhn.informatsii, 1959. 143 p. (MIRA 13:2)

(Uranium) (Thorium)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

VOL'FSON, F.I.; LUKIN, L.I.; DYUKOV, A.I.; KUSHNAREV, I.P.; PEK, A.V.; RYBALOV, B.L.; SONYUSHKIN, Ye.P.; KHOROSHILOV, L.V.; CHERNYSHEV, V.F.; BIRYUKOV, V.I.; GARMASH, A.A.; DRUZHININ, A.V.; KARAMYAN, K.A.; KUZNETSOV, K.F.; LOZOVSKIY, V.I.; MALINOVSKIY, Ye.P.; NEVSKIY, V.A.; PAVLOV, N.V.; ROMENSON, B.M.; SAMONOV, I.Z.; SIDORENKO, A.V. [deceased]; SOPKO, P.F.; CHEGLOKOV, S.V.; YUDIN, B.A.; KREYTER, V.M., doktor geologo-mineral.nauk, retsenzent; KOTLYAR, V.N., doktor geologo-mineral.nauk, retsenzent; GRUSHEVOY, V.G., doktor geologo-mineral.nauk, retsenzent; NAKOVNIK, N.I., doktor geologo-mineral.nauk, retsenzent; KUHEK, N.N., doktor geologo-mineral. nauk, retsenzent; LIOGEN'KIY, S.N., retsenzent; SHATALOV, Ye.T., doktor geologo-mineral.nauk, red.; KRISTAL'NYY, B.V., red.; SERGEYEVA, N.A., red.izd-va; GUROVA, O.A., tekhn.red.

[Basic problems and methods of studying structures of ore provinces

(Continued on next card)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

VOL'FSON, F.I.---(continued) Card 2.

and deposits] Osnovnye voprosy i metody izucheniia struktur rudnykh polei i mestorozhdenii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1960. 623 p.

(MIRA 13:11)

1. Akademiya nauk SSSR. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii. 2. Moskovskiy institut tsvetnykh metallov i zolota (for Dyukov, Biryukov, Druzhinin, Kuznetsov). 3. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR (for Germash). 4. Akademiya nauk Armyanskoy SSR (for Karamyan). 5. Baleyzoloto (for Sidorenko). 6. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR (for Malinovskiy, Nevskiy, Pavlov, Chernyshev). 7. Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze (for Ronenson). 8. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (for Samonov). 9. Voronezhskiy universitet (for Sopko). 10. Kol'skiy filial AN SSSR (for Yudin).

(Ore deposits)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

ROZANOV, Yu.A.; KRISTAL'NYY, B.V.; NEKRASOV, Ye.M.; PASHKOVSKAYA, M.D.

Changes in the pores of enclosing rocks in some deposits of northern Tajikistan. Trudy IGEM no.41:171-177 '61. (MIRA 14:8)
(Tajikistan--Ore deposits) (Porosity)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NYY, B.V.

Stages in endogenous mineralization of ore-bearing areas in the Chorukh-Dayron ore zone. Geol.rud.mestorozh. 5 no.1:36-49 Ja-F '63. (MIRA 16:3)

1. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii Gosudarstvennogo komiteta Soveta Ministrov SSSR po koordinatsii nauchno-issledovatel'skikh rabot i AN SSSR, Moskva.
(Chorukh-Dayron region--Mineralogy)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NYY, B.V.

Structural conditions governing the endogenetic mineral formation and characteristics of the localization of mineralization in the main ore-bearing zones of the Chorukh-Dayron ore field. Geol. rud. mestorozh. 5 no.6:34-50 N-D'63. (MIRA 17:5)

1. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii Gosudarstvennogo komiteta Soveta Ministrov SSSR po koordinatsii nauchno-issledovatel'skikh rabot i AN SSSR, Moskva.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

MALINOVSKIY, Yevgeniy Pavlovich; LUKIN, L.I., kand. geol.-miner. nauk otv. red.; KRISTAL'NYY, B.V., red.

[Structural conditions for the formation of vein volframite deposits] Strukturnye usloviia formirovaniia zhil'nykh vol'framitovykh mestorozhdenii. Moskva, Nauka, 1965. 1965. 162 p. (MIRA 18:9)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

5(4) SOV/20-124-3-39/67

AUTHORS: Sheynker, A. P., Yakovleva, M. K., Kristal'nyy, E. V., Abkin, A. D.

TITLE: On the Mechanism of the Low-temperature Polymerization of Monomers Under the Action of a Gamma-radiation (O mekhanizme nizkotemperaturnoy polimerizatsii monomerov pod deystviyem gamma-izlucheniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3, pp 632-634 (USSR)

ABSTRACT: The present paper deals with the results obtained by investigating the mechanism of the low-temperature polymerization of various vinyl compounds under the action of a γ-radiation. The authors investigated this mechanism by employing the method of joint polymerization, according to which it is possible to obtain the necessary information concerning the nature of active particles (radicals, ions) participating in the active process from the composition of the Ko-polymer and from the kinetic data. The authors investigated the common polymerization of isobutyls with vinylidene chloride (in the "mass") in the temperature interval of -78 to 0°,

Card 1/4

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

SOV/20-124-3-39/67

On the Mechanism of the Low-temperature Polymerization of Monomers Under the Action of a Gamma-radiation

and of methyl-metacrylate with styrene in ethylchloride as solvent at -78 to +25°. Polymerization was carried out in ampoules on a Co^{60}-source of 20,000 g-equivalents at an intensity of 230-250 r/sec. The degree of polymerization was not more than 10%. A diagram supplies data concerning the dependence of the copolymers on the composition of the original mixture for the system isobutylene-vinylidene chloride, which were determined in the course of polymerization at different temperature conditions. From these data the constants of the common polymerization α (for isobutylene) and β (for vinylidene chloride) were then determined according to the simplified equation for the integral composition. The following holds:

Polymerization temperature in °C	α	β
-78	25	0
-40	1.27	0.21
0	0.03	1.3

Card 2/4 The composition of the common polymers formed depend to a

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SOV/20-124-3-39/67

On the Mechanism of the Low-temperature Polymerization of Monomers Under the Action of a Gamma-radiation

considerable extent on temperature. Details are given. The data discussed in the present paper permit the following conclusions to be drawn: The joint polymerization of isobutylene with vinylidene chloride under the influence of a γ-radiation at low temperatures occurs according to the carbonium (karboniyeviy) mechanism or a similar mechanism. The authors further investigated the polymerization of styrene in an equimolecular mixture of styrene and methyl metacrylate in ethyl chloride as solvent. With decreasing temperature, the methyl metacrylate component in the copolymer decreases, which indicates an increase of the share of ion reactions in this process. The authors thank Academician S. S. Medvedev for discussing the results obtained. There are 2 figures, 2 tables, and 8 references, 4 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Scientific Research Institute imeni L. Ya. Karpov)

Card 3/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

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SOV/20-124-3-39/67

On the Mechanism of the Low-temperature Polymerization of Monomers Under the Action of a Gamma-radiation

PRESENTED: October 30, 1958, by S. S. Medvedev, Academician

SUBMITTED: October 27, 1958

Card 4/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NYY, E.V.; MEDVEDEV, S.S.

γ-ray-induced polymerization of isobutylene in the presence of ZnO and Al_2O_3. Vysokom. soed. 7 no.8:1373-1376 Ag '65. (MIRA 18:9)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova AN SSSR, Moskva.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NYY, E.V.; MEDVEDEV, S.S.

γ-ray-induced polymerization of isobutylene in the presence of solids. Vysokom. soed. 7 no.8:1377-1382 Ag '65. (MIRA 18:9)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova AN SSSR, Moskva.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

PA 27T101

KRISTAL'NYY, V. S.

USSR/Telephone Lines Jan 1947
Telephones - Apparatus

"Operating Communications on the Basis of Direct Connection with Subscribers," V. S. Kristal'nyy, Chief Engr Central Inter-city Telephone Station, 1½ pp

"Vestnik Svyazi - Elektrosvyaz'" No 1 (82)

The rapid development of the 12-channel overhead lines of the inter-city telephone circuits and also some independent lines permits improvement of direct subscriber telephone service. Author discusses the advantages of a direct subscriber system and hopes that the Ministry of Communications will give some serious thought to the adoption of this type of service.

27T101

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

1. KRISTALNYY, V.

2. USSR (600)

4. Telephone Stations

7. At the central international telephone station, Sov. sviaz., No. 10, 1951.

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

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NYY, V.S.: OGARKOV, P.F., redaktor; SOKOLOVA, R.Ya. tekhnicheskiy redaktor.

[Engineer Kovalev's method at the central long distance telephone office] Metod inzhenera Kovaleva na TSentral'noi mezhdugorodnoi telefonnoi stantsii. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1952. 69 p. (Microfilm) (MLRA 8:8)
(Telephone)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NY, V.S.

USSR/Miscellaneous - Communications

Card 1/1 Pub. 133 - 15/23

Authors : Kristal'ny, V. S., Chief Engineer of the Central Long-Distance (Interurban) Telephone Station

Title : Methods for increasing the efficiency and revenue of the long-distance telephone station exchanges

Periodical : Vest. svyazi 8, 22-23, Aug 1954

Abstract : Methods for speeding-up long-distance calls and increasing the central telephone-stations income are discussed and plans for attaining the above aims, proposed by the Ministry of Communications, are outlined. As an example of improved methods of operation, the article points out that the average waiting interval for obtaining a long-distance telephone connection in USSR has been decreased from 28.4 to 5.9 minutes, thus effecting a considerable economy in cost.

Institution : ...

Submitted : ...

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

AFANAS'YEV, Aleksandr Porfir'yevich; GUSEV, Simon Stepanovich; KRISTAL'NYY, Vladimir Samoylovich; RAMENSKIY, Boris Nikolayevich, redaktor; ROZENBERG, Yakov Grigor'yevich; SILIN, Konstantin Fedorovich; GAVRILOV, A.V., redaktor; SOKOLOVA, R.Ya., tekhnicheskiy redaktor.

[Establishing electric and radio communication facilities in the district] Ekspluatatsiia sredstv elektrosviazi i radiofikatsii v raione. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1955. 187 p. (MLRA 8:12)
(Telecommunication) (Radio)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

IVANOVA, A.A.; KRISTAL'NYY, V.S.; FALUNIN, A.F.; MEDVEDEV, Ye.S., otvetstvennyy red.; KUKUSOV, L.V., red.; MAZEL', Ye.I., tekhn. red.

[Interurban telephone stations] Meshdugorodnye telefonnye stantsii. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1958. 371 p. (Telephone stations) (MIRA 11:8)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NYY, Vladimir Samoylovich. Prinimal uchastiye GENIN, L.S.. SHTEYNBERG, A.L., retsenzent; SMIRYAGIN, A.G., otv.red.; BOGACHEVA, G.V., red.; SHEFER, G.I., tekhn.red.

[Long-distance telephone communications] Ekspluatatsiia mezhdugorodnoi telefonnoi sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1959. 182 p. (MIRA 13:1)
(Telephone)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAL'NYY, Vladimir Samoylovich; KITAYEV, V.Ye., retsenzent; IVANNIKOVA, S.N., retsenzent; KUZNETSOV, S.N., otv. red. OBRAZTSOVA, Ye.A., red.

[Electrician of long-distance telephone exchanges] Monter mezhdugorodnoi telefonnoi stantsii. Moskva, Sviaz', 307 p. (MIRA 17:9)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAN, Frantisek, inz.

Effect of large doses of industrial fertilizer on crop rotation in a potato zone. Rost vyroba 9 no.3/4:299-312 Mr-Ap '63.

1. Ustredni vyzkumny ustav rostlinne vyroby, Ruzyne, pracoviste Lukavec u Pacova.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAN, Frantisek, inz.

Effect of large amounts of industrial fertilizers where there is crop rotation in a potato zone. Pt.2. Rost vyroba 9 no.11:1129-1148 N '63.

1. Ustredni vyzkumny ustav rostlinne vyroby, Ruzyne, pracoviste Lukavec u Pacova.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAN, J.

C-8

YUGOSLAVIA/Nuclear Physics - Nuclear Technology and Power

Abs Jour : Ref Zhur - Fizika, No 5, 1959, No 10272

Author : Kristan J.
Inst : -
Title : Catalytic Recombination of Radiolytic Gas.

Orig Pub : Repts. "J. Stefan" Inst., 1957, 4, 143-145

Abstract : A comparative study is made of the effectiveness of catalysts made of palladium, platinum, and nickel in recombination of a fulminating mixture in the vapor-gas phase at 10 atmos and various catalyst temperatures. The experiments were carried out in a boiler with internal electrodes for generating the fulminating mixture. The catalyst used consisted of grains with activated surfaces and was heated by a special heater. -- V.V. Orlov

Card : 1/1

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

39951
Z/014/62/000/007/001/003
E192/E382

9,2110

AUTHOR: Kristan, Luděk, Engineer

TITLE: Miniature electrolytic condensers in transistor circuits

PERIODICAL: Sdělovací technika, no. 7, 1962, 246 - 247

TEXT: Some difficulties may arise when electrolytic condensers (especially miniature ones) are used at high frequencies and at variable temperatures. The equivalent circuit of a condenser is in the form shown in Fig. 2, where the inductance L can easily be neglected at audio-frequencies. On the other hand, the series resistance R_s has to be taken into account, especially in view of the fact that it varies widely with temperature (see Fig. 5). The capacitance C is also dependent on temperature. These variations of R_s and C should be taken into account when designing transistor circuits and the condensers should never be used at frequencies for which they have not been designed. It is therefore recommended that users should subject their condensers to suitable tests in order to determine whether

Card 1/2

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

Z/014/62/000/007/001/003
E192/E382

Miniature electrolytic ....

they can cover the required frequency and temperature range. In particular, it may be advisable to use electrolytics of the standard type in transistor circuits instead of the miniature and sub-miniature types available. There are 7 figures.

Fig. 2:

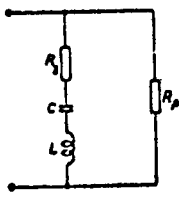
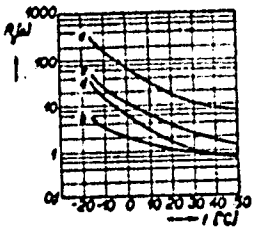


Fig. 5:



Card 2/2

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

KRISTAN, Ludek, inz.

Nonsymmetrical hybrid coils. Slaboproudy obzor 24 no.11: 659-663 N'63.

1. Vyzkumny ustav telekomunikaci, Praha.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7

VOCEL, J.; POLACEK, E.; NEUGEBAUROVA, L.; SEBKOVA, J.; Technicka spoluprace: KRISTAN, M.

Concentration test in premature and young infants. Cesk. pediat. 18 no.9:774-780 S '63.

1. I detska klinika fakulty detskeho lekarstvi KU v Praze, prednosta prof. dr. J. Svejcar Ustav vyskumu vyvoje dityte v Praze, reditel prof. dr. J. Houstek II detska klinika fakulty detskeho lekarstvi KU v Praze, prednosta prof. dr. J. Houstek Kojenecky ustav v Praze-Krci, reditel MUDr. K. Zeman.
(INFANT, PREMATURE) (KIDNEY FUNCTION TESTS)
(URINE)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510020-7"