"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDBERG, P.B.

AID Nr. 995-10 21 June

$TiCr_2$-$NbCr_2$ SYSTEM (USSR)

Kornilov, I. I., K. I. Shakhova, P. B. Budberg, and N. A. Nedumov. IN: Akademiya nauk SSSR. Doklady, v. 149, no. 6, 21 Apr 1963, 1340-1342.
S/020/63/149/006/017/027

Ten $TiCr_2$-$NbCr_2$ alloys with 0 to 100% $TiCr_2$ have been studied at the Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR. From

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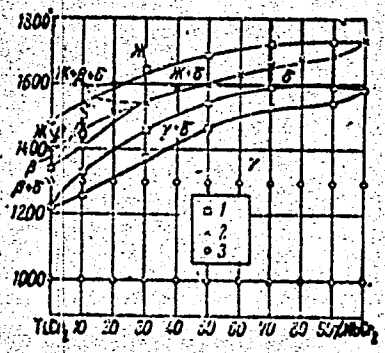

1, 2 - contactless and optical thermal analysis; 3 - x-ray diffraction analysis (Ж = L)

the results of the thermal and x-ray diffraction analyses, the phase diagram (see illustration) of the system was plotted. Over the entire concentration range, $TiCr_2$ and $NbCr_2$ form a continuous series of solid solutions not only between the high-temperature modifications δ but also between the low-temperature modifications γ. The γ-δ transformation temperatures for $TiCr_2$ and $NbCr_2$ were determined as 1220 ± 10°C and 1585 ± 10°C, respectively. On the $TiCr_2$ side the β, β + δ, β + L, and β + δ + L regions are present, since the $TiCr_2$ compound in the binary Ti-Cr system is formed from a solid solution with a bcc lattice (the β-phase). X-ray diffraction patterns of alloys quenched from 1300°C showed that at this temperature the $TiCr_2$ compound is a hexagonal δ-phase; the 90%

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AID Nr. 995-10 21 June

$TiCr_2$-$NbCr_2$ SYSTEM [Cont'd] S/020/63/149/006/017/027

$TiCr_2$ + 10% $NbCr_2$ alloy consists of hexagonal δ and cubic γ modifications. Alloys with more than 20% $NbCr_2$, as well as the $NbCr_2$ compound, consist only of the cubic γ-phase. In alloys annealed at 1000°C for 200 hrs, only the γ-phase was found. Thus, the $TiCr_2$-$NbCr_2$ system can be regarded as a quasi-binary section of the ternary Ti-Nb-Cr system up to 1340°C, when decomposition of the $TiCr_2$ compound to a solid solution of Ti and Cr occurs.

[MS]

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

SHAKHOVA, K.I. (Moskva); BUDBERG, P.B. (Moskva)

Solidus surface of the system Titanium - Niobium - Chromium. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.4:159-160 Jl-Ag '63.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ALISOVA, S.P.; BUDBERG, P.B.; SHAKHOVA, K.I.

Crystalline structure of the $HfCr_2$ compound. Kristallografiia 9 no.1:100-101 Ja-F '64. (MIRA 17:3)

1. Institut metallurgii im. A.A.Baykova.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ACCESSION NR: AT4007025 S/2598/63/000/010/0037/0041

AUTHOR: Shakhova, K.I.; Budberg, P. B.

TITLE: Investigation of ternary titanium-niobium-chromium alloys

SOURCE: AN SSSR. Institut metallurgii. Titan i yego splavy*, no. 10, 1963. Issledovaniya titanovy*kh splavov, 37-41

TOPIC TAGS: titanium ternary alloy, titanium chromium niobium alloy, titanium alloy, alloy structure, titanium chromium niobium system

ABSTRACT: The cross sections of the ternary system Ti-Nb-Cr corresponding to Ti: Nb= 4:1, 3:2, 2:3 and 1:4, as well as the compounds TiC_2-$NbCr_2$, have been studied by means of microstructure analysis and X-ray diffraction. The specimens were annealed in argon at temperatures of 1300-1500 C for 60-70 hours (alloys rich in Ti) and up to 240 hours (alloys rich in Nb and Cr). The specimens were then hardened at 1000, 800, and 600 C. The microstructures as determined by the common etching methods are shown in the original. On the basis of the X-ray and microstructure data, isothermic cross sections in alloys hardened at 1000, 800, and 600 C were constructed and are shown in Figure 1 of the Enclosure. The basic area of the figure for alloys hardened at 1000 C consists of a mixture of the β and γ solid solutions, γ representing the solid solution of the compounds

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ACCESSION NR: AT4007025

$(TiNb)Cr_2$. The area of the β solid solution is gradually reduced as the content of Nb in the alloys is increased. The phase distribution in the isothermic cross section at a hardening temperature of 800 C did not differ from the isothermic cross section at 1000 C, except that a biphasic area of $\alpha + \beta$ phases was found in the Ti corner. In the 600 C cross section of the ternary system, a large area of $\alpha + \beta + \gamma$ phases is formed which borders on the biphasic areas $\alpha + \beta$, $\alpha + \gamma$, and $\beta + \gamma$. Monophasic alloys exist only in the area with Nb content above 50%. The changes in lattice periods corresponding to the individual phases are also shown. Orig. art. has: 5 figures.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy, AN SSSR)

SUBMITTED: 00 DATE ACQ: 27Dec63 ENCL: 01

SUB CODE: ML NO REF SOV: 003 OTHER: 002

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

SHAKHOVA, K.I.; BUDBERG, P.B.

Investigating alloys of the ternary system Ti - Nb - Cr. Titan i ego splavy no.10:37-41 '63. (MIRA 17:1)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ACCESSION NR: AP4012442 S/0078/64/009/002/0372/0377

AUTHOR: Alisova, S. P.; Budberg, P. B.; Samsonova, N. N.; Shakhova, K. I.

TITLE: Analysis of the system Ni-Cr-W-Al

SOURCE: Zhurnal neorg. khim., v. 9, no. 2, 1964, 372-377

TOPIC TAGS: nickel alloy, alloy phase boundary, hot hardness, Ni-Cr-W-Al alloy, Ni-Cr-W-Al system, Ni-Cr alloy system, Al-W system, hot hardness, hardness reduction

ABSTRACT: Phase boundaries of Ni-Cr-W-Al alloys were determined more precisely by the x-ray method, a detailed microstructural analysis was made, and the nature of the change in the hot hardness of the alloys was studied in relation to composition and temperature. The investigation was performed with tetrahedral cross sections passing through the edge of the Ni-Cr binary system and intersecting the edge of the Al-W system with W:Al ratios of 3:1, 1:1, and 1:3. The hot hardness was analyzed at 100 deg intervals over a temperature range of 20-1100C. It was found that the alloy retains substantially its initial hardness up to 700C. Above this temperature a gradual stress relief sets in, the hardness changing

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ACCESSION NR: AP4012442

from 313 kg/mm^2 at 700C to 106 kg/mm^2 for an alloy containing 10% Cr, 15% W, 5% Al, and 70% Ni. The β-phase appears to be the cause for the beginning of stress relief at low temperatures. The presence of α_2 and γ' phases in combination with γ solid solution has no effect on hot hardness. For alloys containing 20% Cr, 10% W, 10 % Al, and 60% Ni or 30% Cr, 5% W, 5% Al, and 60% Ni with corresponding (γ + γ' + α_1) and (γ + α_1) structures, the change of hardness with respect to temperature is a two-step process with a constant stress-relief rate. For the three-phase and the two-phase alloys the reduction in hardness reaches 14.3% and 19% at 600C, respectively. Further increases in temperature greatly reduce alloy hardness. At about 1000C the alloys are almost completely stress relieved. Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 30Jan63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: CH, ML NO REF SOV: 002 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

SHAKHOVA, K.I.; BUDBERG, P.B.

Evaluation of the strength of the interatomic bond in alloys of the system titanium-niobium-chromium. Soob. AN Gruz. SSR 34 no.1:135-140 Ap'64 (MIRA 17:7)

1. Institut metallurgii imeni A.A. Baykova, Moskva. Predstavleno akademikom F.N. Tavadze.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ALISOVA, S.P.; BUDBERG, P.B.; SHAKHOVA, K.I.

Polymorphism of the $ZrCr_2$ compound. Kristallografiia 9 no.3: 419-421 My-Je '64. (MIRA 17:6)

1. Institut metallurgii imeni A.A. Baykova.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

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L 15 70-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pu-4 ASD-3/AFFTC/ESD-3/SSD/IJP(c)
ACCESSION NR: AT4048069 S/0000/64/000/000/0184/0189
JD/JG/MLK

AUTHOR: Shakhova, K. I.; Budberg, P. B.

TITLE: Stability of the interatomic bond of monophasic alloys of the Ti-Nb-Cr system

SOURCE: Soveshchaniye po metallurgii, metallovedeniyu i primeneniyu titana i yego splavov. 5th. Moscow, 1963. Metallovedeniye titana (Metallography of titanium); trudy* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 184-189

TOPIC TAGS: titanium alloy interatomic bond, titanium alloy stability, interatomic bond stability, monophasic alloy, niobium containing alloy, chromium containing alloy, alloy crystal structure

ABSTRACT: The stability of the interatomic bond in the crystal lattice of metals and alloys is characterized by the heats of sublimation, melting and dissolution, elasticity constants, the mean distribution of atoms in the lattice and other parameters. The present paper investigates the forces of interatomic bonding in monophasic Ti-Nb-Cr alloys. The elasticity constants of the β and γ alloys were determined on the "Elastomat" unit with an accuracy of 1-1.5% after quenching from 1000C with Ti:Nb = 4:1, 3:2, 2:3 or 1:4. All alloys with 50% Cr, where the γ-phase is predominant, show a modulus of normal elasticity of the solid solution

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L 15570-65

ACCESSION NR: AT4048069

which is much higher than for the pure components of the β-phase. The values of the mean distribution of atoms were calculated by the Debye-Weller equation. The tests showed that niobium has less of an effect on the forces of interatomic bonding than chromium. Chromium is very important for increasing the strength as the temperature rises. The tests also indicated that increasing the niobium content in the γ-solid solution leads to proportional increases in the characteristic temperature and bonding strength in the γ-phase lattice. These conclusions were verified by tests at high temperatures. By analyzing the data on the variation in hot strength of the alloys it can be seen that monophasic β-solid solutions are weakened more rapidly than γ-phase alloys. The results also corroborate previous conclusions from the analysis of atomic distribution at 0 and 293K. Although chromium is most effective for hardening β-solid solutions, niobium is important for hardening the γ-phase. "S. G. Fedotov assisted in the determination of the elastic constants." Orig. art. has: 3 figures, 5 formulas and 3 tables.

ASSOCIATION: none

SUBMITTED: 15Jul64 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

L 29521-65 EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b) Pu-4 IJP(c) JD/JG

ACCESSION NR: AP4038715 S/0251/64/034/001/0135/0140

38
37
B

AUTHORS: Shakhova, K. I.; Budberg, P. B.

TITLE: Determining the strength of the interatomic bond in alloys of the titanium-niobium-chromium system

18

SOURCE: AN GruzSSR. Soobshcheniya, v. 34, no. 1, 1964, 135-140

TOPIC TAGS: titanium, niobium, chromium, crystal lattice, alloy, shear strength, elastic modulus/Elastomat device

ABSTRACT: The authors have determined the elasticity modulus and the shear modulus by the radio engineering method, using an "Elastomat" device. This permits determination with an accuracy of 1-1.5%. Specimens were prepared in an arc furnace and poured in vacuum. They were made into cylindrical rods 80-100 mm in length, 6-8 mm in diameter. It was found that $TiCr_2$ and $NbCr_2$ form a continuous series of solid solutions in the investigated temperature range (600-1000C). The crystal lattice is of the type C_{15}. It was found that transition from the single-phase region of beta alloys to the two-phase region of beta plus gamma produces a notable increase in the elastic constants. The value of elastic contents determined by the

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

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ACCESSION NR: AP4038715

authors permits computation of characteristic temperature and of mean-square displacement of atoms from equilibrium position in the crystal lattice. Chromium was found to strengthen greatly the interatomic bond of alloys, but niobium had a lesser effect. Results indicate that the strength of the bond in solid solutions of metals is lower than in compounds. The bond in solid solutions of metals is weakened more on heating than the bond in solid solutions of metallic compounds. Orig. art. has: 2 figures, 3 tables, and 3 formulas.

ASSOCIATION: Institut metallurgii im. A. A. Baykova, Moscow (Institute of Metallurgy)

SUBMITTED: 20Jan63 ENCL: 00 SUB CODE: MM, SS

NO REF SOV: 003 OTHER: 001

Card 2/2

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

L 55854-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EPF(n)-2/EWA(c)/EWP(b) Pu-4 IJP(c)
JD/JG

ACCESSION NR: AP5013115 UR/0370/65/000/002/0128/0133
669.017.1 : 620.17.

29
28
B

AUTHOR: Shakhova, K. I. (Moscow); Budberg, P. B. (Moscow)

TITLE: Some strength characteristics of the Ti-Nb-Cr alloy system

SOURCE: AN SSSR. Izvestiya. Metally, no. 2, 1965, 128-133

TOPIC TAGS: titanium alloy, chromium alloy, niobium alloy, metal physical property, metal mechanical property

ABSTRACT: Quenching hardness, hot hardness and elastic constants were investigated for four Ti-Nb alloys (4:1, 3:2, 2:3, 1:4) with increasing amounts of Cr. The authors had previously determined the constitution diagram in the investigated regions. Cr appears to be the main strengthener of β phase (titanium solid solution) while the effect of Nb is somewhat weaker. The strengthening of two and three phase regions is basically dependent on the enrichment of γ-phase (chromium solid solution) by niobium. The basic high temperature strengthener appears to be chromium. Alloys based on the γ-phase show the maximum hardness values. These alloys

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L 55854-65

ACCESSION NR: AP5013115

are only slightly weakened when the temperature is raised to 1000°C. The modulus of elasticity (tensile and shear), measured by radio frequency, changes rather sharply from one phase to another and this change verifies the phase transition regions. Alloys quenched from 1000°C have a lower elastic modulus than those quenched from 1000°C and reheated to 600°C as the body centered cubic lattice β has a lower elastic modulus than the hexagonal lattice. The largest elastic moduli were observed for solid solutions of intermetallic compounds. Orig. art. has: 4 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 25Jan64 ENCL: 00 SUB CODE: MM

NO REF SOV: 012 OTHER: 002

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

L 64485-65 EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/JG

ACCESSION NR: AP5021504

UR/0370/65/000/004/0168/0175
669.017.13

AUTHOR: Kornilov, I. I. (Moscow); Shakhova, K. I. (Moscow); Budberg, P. B. (Moscow)

TITLE: Phase diagram of the Ti-Nb-Cr system

SOURCE: AN SSSR. Izvestiya. Metally, no. 4, 1965, 168-175

TOPIC TAGS: alloy phase diagram, titanium alloy, niobium alloy, chromium alloy

ABSTRACT: The phase diagram for the Ti-Nb-Cr system is studied in the region bounded by the Ti-Nb side and by the cross section which passes through the metallic compounds (metallides) $TiCr_2$-$NbCr_2$. The alloys for the study were melted in an arc furnace with a nonconsumable tungsten electrode in an argon atmosphere. Every alloy was remelted six or seven times. The charge was made up of titanium iodide and TG-113 titanium, 99.27% pure pig niobium and 99.98% pure electrolytic chromium. All specimens went through homogenizing annealing in a TVV-2M furnace in an argon atmosphere at temperatures of 1300-1500°C. Specimens with a high titanium content were annealed for 60-70 hours while those rich in chromium and niobium went through a 200-240 hour annealing. Microstructural and x-ray analysis showed that these an-

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ACCESSION NR: AP5021504

nealing temperatures produced an equilibrium state in the alloys. The samples were then subjected to the following vacuum heat treatment: quenching from 1000°C after holding for 100-150 hours; quenching from 800°C--holding for 350-450 hours; quenching from 600°C--holding for 500-550 hours. The compositions studied are situated along four radial sections of the concentration triangle starting from the chromium point with titanium:niobium ratios of 4:1, 3:2, 2:3, and 1:4. The phase structure of the alloys was determined by microstructural analysis, Debye x-ray phase analysis, hardness and electrical resistance measurements, and by using the optical method to determine the temperature at which the alloys begin to melt. Polythermal and isothermal sections of the system were studied for every 100° in the 1300-1900°C range, (see figs. 1-7 of the Enclosure). Orig. art. has 4 figures.

ASSOCIATION: none

SUBMITTED: 18Mar64 ENCL: 07 SUB CODE: MM

NO REF SOV: 005 OTHER: 000

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EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/JG

ACC NR: AP5025793 SOURCE CODE: UR/0363/65/001/009/1558/1563

AUTHOR: Samsonova, N. N.; Budberg, P. B.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut Metallurgii)

TITLE: Investigation of alloys of the titanium-vanadium-chromium system

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1558-1563

TOPIC TAGS: alloy, ternary alloy, titanium alloy, vanadium containing alloy, chromium containing alloy, alloy structure, alloy phase diagram

ABSTRACT: Several series of the alloys of the ternary titanium-vanadium-chromium system with compositions located along three sections through the titanium corner (V:Cr ratio 1:4, 1:1, and 4:1) and along the V-TiCr section were investigated. Alloys of 99.99%-pure Cr, 99.74%-pure V, and TG-118 titanium sponge were melted in a nonconsumable electrode arc furnace or levitation melted (for phase analysis). The solidus surface (see Fig. 1) is characterized by a gradual decrease in the solidus temperature from the pure components and the Ti-V and V-Cr sides to the Ti-Cr side. Alloys containing about 50 wt% Cr have solidus temperatures below 1400C. No singular points or kinks were observed in the system. Isothermal sections at 1200 and 900C are characterized by a wide region of the β-ternary solid solution. With

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UDC: 546.3-19-821-881-73

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L 7666-66

ACC NR: AP5025793

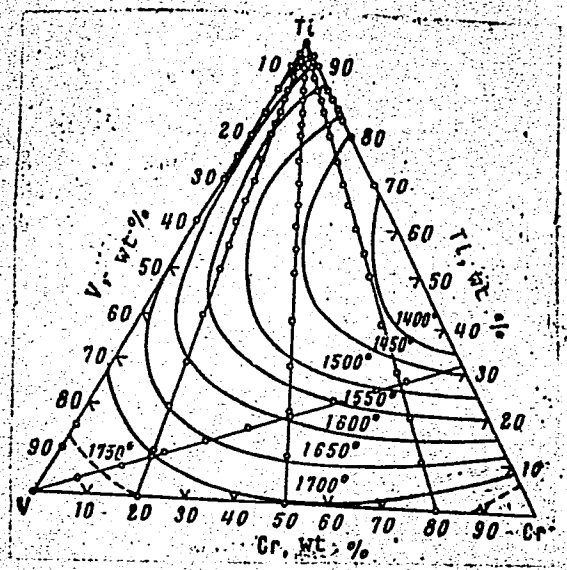

Fig. 1. The solidus surface of the titanium-vanadium-chromium system (Figures at the curves indicate solidus temperatures; small circles indicate the composition of the alloys.)

increasing temperature, the two-phase region with a $\beta + \gamma$ structure (γ is a $TiCr_2$-base solid solution) increases significantly. Titanium-rich alloys undergo a martensitic transformation on quenching. Orig. art. has: 3 figures and 2 tables. [MS]

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ACC NR: AP5025793

SUB CODE: MM/ SUBM DATE: 27Apr65/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS: 4142

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

L 53679-65 EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) Pu-4 IJP(c) JD/WW/JG

ACCESSION NR: AP5012770 UR/0020/65/161/006/1378/1381

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40
B

AUTHOR: Kornilov, I. I.; Budberg, P. B.; Shakhova, K. I.; Alisova, S. P.

TITLE: Phase diagram of the $TiCr_2$-$ZrCr_2$ system

SOURCE: AN SSSR. Doklady, v. 161, no. 6, 1965, 1378-1381

TOPIC TAGS: titanium chromium alloy, zirconium chromium alloy, alloy phase diagram, alloy composition, alloy structure, alloy crystal lattice

ABSTRACT: The phase composition and microstructure of pure $TiCr_2$ and $ZrCr_2$ compounds and nine $TiCr_2$-$ZrCr_2$ alloys containing from 10 to 90% $TiCr_2$, arc and levitation melted and homogenized at 1250—1300C for 50 hr, have been determined by thermal and x-ray-phase analysis. Thermal analysis showed that the alloy liquidus temperatures increased with increasing $ZrCr_2$ content, e.g., from 1480 to 1675C for pure $TiCr_2$ and $ZrCr_2$, respectively. An analogous increase occurred in the lattice constants. The phase diagram of the $TiCr_2$-$ZrCr_2$ system (see Fig. 1 of the Enclosure) based on the obtained data is characterized by the formation of a continuous series of solid solutions between both the low-temperature and the high-temperature modifications of $TiCr_2$ and $ZrCr_2$ compounds. The appearance of the two-phase ($\beta + \delta$) and three-phase

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ACCESSION NR: AP5012770

($L + \beta + \delta$) regions in the $TiCr_2$-rich alloys is explained by the fact that the $TiCr_2$ compound is formed in the binary Ti-Cr system in the solid state. Orig. art. has: 4 figures and 2 tables. [MS]

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 09Jul64 ENCL: 01 SUB CODE: MM, SS

NO REF SOV: 006 OTHER: 006 ATD PRESS: 4011

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ACCESSION NR: AP5012770

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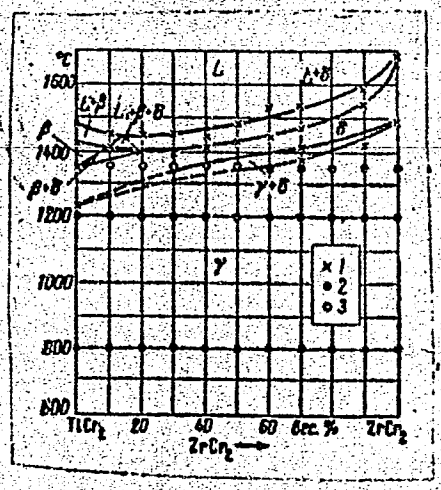

Fig. 1. Phase diagram of the $TiCr_2$-$ZrCr_2$ system

1 - Thermal analysis data; 2 - $(TiZr)Cr_2$ solid solution with a cubic lattice; 3 - $(TiZr)Cr_2$ solid solution with a hexagonal lattice.

BAB

Card 3/3

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

SAMSONOVA, N.N.; BUDBERG, P.B.

Alloys of the system titanium - vanadium - chromium. Izv. AN SSSR. Neorg. mat. 1 no.9:1558-1563 S '65. (MIRA 18:11)

1. Institut metallurgii imeni Baykova.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

KORNILOV, I.I.; ALISOVA, S.P.; BUDBERG, P.B.

Phase equilibrium diagram of the system of intermetallic compounds $NbCr_2$ - $ZrCr_2$. Izv. AN SSSR. Neorg. mat. 1 no.12 2205-2207 D '65. (MIRA 18:12)

1. Institut metallurgii im. A.A. Baykova. Submitted May 28, 1965

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

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L 39783-66 EWT(m)/EPF(n)-2/T/EWP(t)/ETI IJP(c) WW/JD/GS/GD-2/JG

ACC NR: AT6012367 SOURCE CODE: UR/0000/65/000/000/0037/0042

AUTHORS: Budberg, P. B.; Shakhova, K. I.; Alisova, S. P.

ORG: none

TITLE: Investigation of the system $TiCr_2$ - $ZrCr_2$

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye isslledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 37-42

TOPIC TAGS: titanium, chromium, zirconium, alloy phase diagram, x ray spectroscopy, crystal lattice

ABSTRACT: An x-ray analysis of the system $TiCr_2$ - $ZrCr_2$ was carried out. The structure of the $ZrCr_2$ crystal lattice was also determined. The $TiCr_2$ - $ZrCr_2$ alloys were prepared after the method of A. A. Fogel' (Izv. AN SSSR, OTN, Metallurgiya i toplivo, 1959, No. 2, 24). The experimental results are tabulated. On the basis of x-ray analysis a phase diagram for the system was constructed (see Fig. 1). It was found that $ZrCr_2$ exhibits polymorphism. The transition temperature for the polymorphic transition was determined by the method of N. A. Nedumov (Zh. fiz. khim. 1961, 34, 184) and was found to be 1480 ± 10C. The low temperature modification of $ZrCr_2$ has the structure of $MgCu_2(C_{15})$ and the high temperature modification--$MgZn_2(C_{14})$.

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L 39783-66

ACC NR: AT6012367

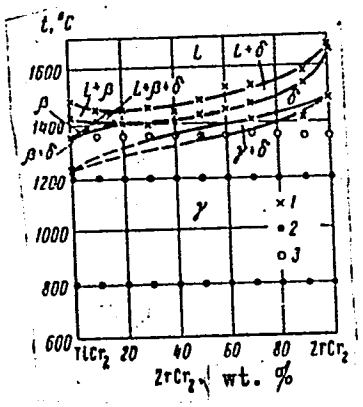

Fig. 1. Phase diagram of the system $TiCr_2$ - $ZrCr_2$.
1 - data of contactless thermal analysis; 2 - solid solution $(TiZr)Cr_2$ with cubic lattice; 3 - the same, but with hexagonal lattice.

The intermetallic compounds $TiCr_2$ and $ZrCr_2$ were found to be isomorphous and to exhibit a continuous series of solid solutions. Orig. art. has: 4 tables and 3 figures.

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 008/ OTH REF: 006

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L 22342-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t) IJP(c) MJW/JD/GS

ACC NR: AT6012397

SOURCE CODE: UR/0000/65/000/000/0243/0246

AUTHOR: Kornilov, I. I. (Doctor of chemical sciences; Professor); Shakhova, K. I.; Nuss, P. A.; Klimov, B. A.; Budberg, P. B.; Chernova, T. S.; Zuykova, N. A.

ORG: none

TITLE: Some mechanical and physical properties of AT13 alloy

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 243-246

TOPIC TAGS: titanium, titanium alloy, aluminum containing alloy, zirconium containing alloy, molybdenum containing alloy, alloy mechanical property, alloy physical property /AT13 alloy

ABSTRACT: On the basis of experimental data on titanium alloys gathered at the Laboratory of the Chemistry of Metallic Alloys of the Institute of Metallurgy im. A. A. Baykov, a new, eight-component, high-strength weldable titanium alloy AT13 has been developed. The alloy liquidus and solidus temperatures were found to be 1800 and 1675C, respectively. The alloy structure consists mainly of the α-phase with a very insignificant amount of the β-phase. The α→β transformation occurs in the 1030-1050C range; no other transformation occurs in the 100—1000C range. At room temperature, AT13 alloy has a tensile strength of 127—129 kg/mm^2, a yield

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L 22342-66

ACC NR: AT6012397

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strength of 120—125 kg/mm^2, an elongation of 4—6%, a reduction of area of 30—35%, an impact toughness of 3 kg·m/cm^2, and an HV hardness of 258 kg/mm^2. In the annealed condition the alloy has an elasticity modulus of 13,600 kg/mm^2, a shear modulus of 4850 kg/mm^2, and a Poisson ratio of 0.4. The alloy softens insignificantly at 500—600C, but the tensile and yield strengths drop sharply as the test temperature increases to 700C. The creep rate at 500 and 600C is low, but sharply increases at 800C. The alloy elongation and the coefficient of thermal expansion increase uniformly with increasing temperature. The alloy resistivity was 1.73 and 1.84 ohm·mm^2/m in the annealed and in the strained condition, respectively. AT13 has the highest electric resistance of all the alloys used for heating elements, i.e., Kh20N80T3 (Nichrome) or OKh27Yu5A (alloy no. 2) and special electric heater alloys MNMts3-12 (manganin) or MNMts40-1.5 (constantan). Further research on AT13 alloy is planned. Orig. art. has: 4 figures. [MS]

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 007/ ATD PRESS: 4241

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ACC NR: AP6031595 SOURCE CODE: UR/0226/66/000/008/0049/0054

AUTHOR: Samsonova, N. N.; Budberg, P. B.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: Effect of vanadium and molybdenum on the properties and phase transformations of $TiCr_2$ intermetallic compound

SOURCE: Poroshkovaya metallurgiya, no. 8, 1966, 49-54

TOPIC TAGS: intermetallic compound, titanium chromium intermetallic compound, titanium ~~compound~~ base alloy, PHASE TRANSITION, CHROMIUM CONTAINING ALLOY

ABSTRACT: Twenty four chromium-titanium-vanadium alloys and 19 chromium-titanium-molybdenum compositions located along the $TiCr_2$-V and $TiCr_2$-Mo sections of the respective composition triangles have been studied. Alloys were melted from iodide titanium, electrolytic 99.99%-pure chromium, 99.75%-pure vanadium and sintered, 99.9%-pure molybdenum. On the basis of data obtained by physicochemical analyses, the polythermal sections of the respective ternary-phase diagrams were plotted. Both alloys crystallize with formation of a continuous series of solid solutions. Vanadium and, especially, molybdenum raise the melting point of alloys. At 1275C for $TiCr_2$-V alloys with vanadium content of 4.0—14.0%, and at 1285C for $TiCr_2$-Mo alloys with molybdenum contents of 6.0—17.0%, a peritectoid transformation takes place. The limits of solubility of vanadium and molybdenum at the temperature of peritectoid transformation were 4% and 6%, respectively, in the high-temperature

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ACC NR: AP6031595

modification of $TiCr_2$ and 7.5 and 9% in the low-temperature modification of $TiCr_2$. Orig. art. has: 5 figures and 1 table. [TD]

SUB CODE: 11 / SUBM DATE: 18Apr66/ ORIG REF: 003/ OTH REF: 005/

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L 07802-67 EWP(e)/EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/JG

ACC NR: AP6034019 (N) SOURCE CODE: UR/0226/66/000/010/0065/0070

AUTHOR: Budberg, P. B.; Alisova, S. P.

34

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

33

TITLE: Investigation of the $TiCr_2$-$TaCr_2$-$NbCr_2$ system

SOURCE: Poroshkovaya metallurgiya, no. 10, 1966, 65-70

TOPIC TAGS: titanium chromium compound, tantalum chromium compound, niobium chromium compound, compound alloy, compound structure, metal compound, alloy system

ABSTRACT: A series of titanium-tantalum-niobium-chromium alloys with composition located within the $TiCr_2$-$TaCr_2$-$NbCr_2$ composition triangle have been investigated. The alloys were melted from iodide titanium, 99.9%-pure chromium, and 99.8%-pure tantalum in an arc furnace and argon atmosphere. From the data obtained by thermal and x-ray diffraction analyses, the solidus surface of the $TiCr_2$-$TaCr_2$-$NbCr_2$ system (see Fig. 1) was plotted. It is characterized by a gradual increase of melting temperature as the alloy composition approaches the $NbCr_2$-$TaCr_2$ side. Both high- and low-temperature modifications of $TiCr_2$ and $TaCr_2$ compounds form a continuous series of solid solutions. $TaCr_2$ and $NbCr_2$, in addition to forming a series of

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L 07802-67

ACC NR: AP6034019

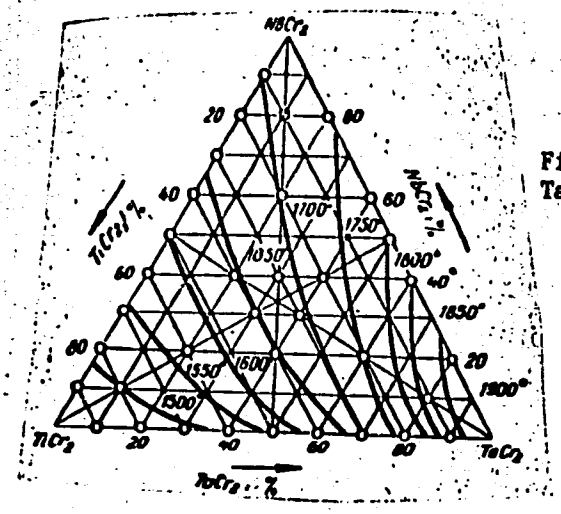

Fig. 1. Solidus surface of the $TiCr_2$-$TaCr_2$-$NbCr_2$ system

solid solutions between isomorphous modifications, also form a phase with a structure of iron-tungsten carbide in the temperature range of 1350—1400C. Orig. art. has: 4 figures and 1 table.

Powder metallurgy 18

SUB CODE: 11/ SUBM DATE: 16Apr66/ ORIG REF: 004/ OTH REF: 004/ ATD PRESS: 5101

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L 39961-66 EWT(m)/T/EWP(w)/EWP(t)/ETI IJP(c) JD/JD

ACC NR: AP6019775 SOURCE CODE: UR/0370/66/000/003/0172/0178

AUTHOR: Kornilov, I. I. (Moscow); Shakhova, K. I. (Moscow); Budberg, P. B. (Moscow)

ORG: none

TITLE: Electrical resistance and thermal expansion of alloys of the Ti-Nb-Cr system

SOURCE: AN SSSR. Izvestiya. Metally, no. 3, 1966, 172-178

TOPIC TAGS: electric resistance, thermal expansion, titanium alloy, niobium alloy, chromium alloy, alloy phase diagram

ABSTRACT: The electrical resistance of alloys of the Ti-Nb-Cr system was investigated as a function of their chemical and phase composition at room temperature and during heating to 1100°C. The thermal expansion in the 20-1100°C range was also studied. The alloys were first quenched from 1000°C and subjected to prolonged annealing. Data on the variation of the electrical resistance with the composition were found to be in good agreement with the results of microstructural and x-ray phase analyses. The electrical resistance data for the 20-1100°C range permitted the determination of the temperature boundaries of existence of the phase regions. Transition from one phase region to another was indicated by the presence of breaks in the curves of electrical resistance vs. temperature. A study of the thermal expansion of alloys during heating made it possible to establish the temperatures of

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L 39961-66

ACC NR: AP6019775

transitions in the solid state. It is shown that eutectoid-type phase transitions take place very slowly in the alloys studied. Orig. art. has: 4 figures and 2 tables.

SUB CODE: 11,20/SUBM DATE: 04Mar64/ ORIG REF: 007

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ACC NR: AP6032954 SOURCE CODE: UR/0363/66/002/010/1878/1881

AUTHOR: Samsonova, N. N.; Budberg, P. B.; Kornilov, I. I.; Asanov, U. A.

ORG: Institute of Metallurgy im. A. A. Baykov, Academy of Sciences, SSSR (Institut metallurgii Akademii nauk SSSR)

TITLE: Interaction between $TiCr_2$ compound and molybdenum

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 10, 1966, 1878 to 1881

TOPIC TAGS: titanium chromium molybdenum system, titanium chromium compound, ~~titanium~~ chromium compound, titanium compound, molybdenum, ~~system~~, ~~titanium compound molybdenum interaction~~ metal physical analysis, metal chemical analysis, hardness

ABSTRACT: A series of chromium-titanium molybdenum alloys with compositions located on the $TiCr_2$-Mo section of the ternary chromium-titanium-molybdenum system were scull melted from 99.99%-pure components and studied by various methods of physico-chemical analysis. Molybdenum was found to stabilize the β-phase ternary-molybdenum-chromium-titanium solution, to raise the solidus temperature and to lower the temperature of the $\beta \rightarrow \delta + \beta \rightarrow \delta$ transformation (see Fig. 1). The microhardness of the alloys at 1300, 1200 and 600C increases with increasing molybdenum content, reaches a maximum of about 820 kg/mm^2 at 6.5% (1300C) or about 825 and 870 kg/mm^2 at 8% (1200 and 600C) molybdenum and then drops rather sharply with further increase in

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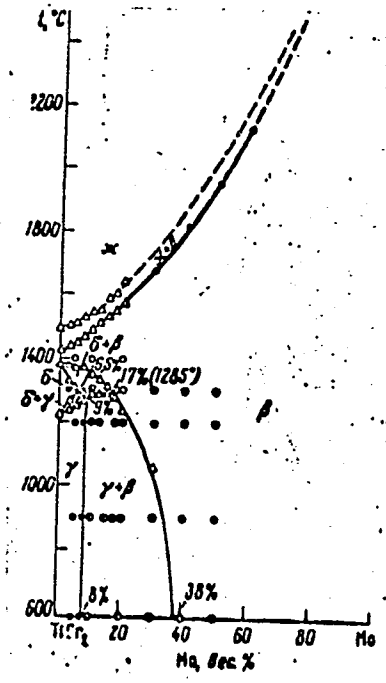

Fig. 1. Polythermal $TiCr_2$—Mo section of the ternary Ti-Cr-Mo diagram.

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ACC NR: AP6032954

molybdenum content. Orig. art. has: 5 figures and 1 table.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

ACC NR: AP6032955

SOURCE CODE: UR/0363/66/002/010/1882/1886

AUTHOR: Samsonova, N. N.; Budberg, P. B.; Kornilov, I. I.; Asanov, U. A.

ORG: Institute of Metallurgy im. A. A. Baykov, Academy of Sciences, SSSR (Institut metallurgii Akademii nauk SSSR)

TITLE: Interaction between $TiCr_2$ compound and vanadium

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 10, 1966, 1882-1886

TOPIC TAGS: titanium chromium vanadium system, titanium chromium compound, titanium compound, vanadium alloy, ~~titanium compound~~ vanadium, ~~system~~ chromium compound, metal physical analysis, metal chemical analysis, hardness

ABSTRACT: A series of chromium-titanium-vanadium alloys with compositions located on the $TiCr_2$-V section of the ternary chromium-titanium-vanadium diagram were levitation melted in helium atmosphere from iodide titanium, 99.99%-pure chromium and 99.75%-pure vanadium and studied by various methods of physicochemical analysis. It was found that vanadium stabilizes β-phase $TiCr_2$-base solid solution, raises the solidus temperature, and lowers the temperature of $\beta \rightarrow \beta + \delta \rightarrow \delta$ transformation (see Fig. 1). The microhardness of the alloys at 1200, 900 and 600C generally decreases with increasing vanadium content, first (in the γ region) slowly, then

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(in the γ + β region) rapidly, and then slowly again in the β-region. Orig. art. has: 6 figures and 1 table.

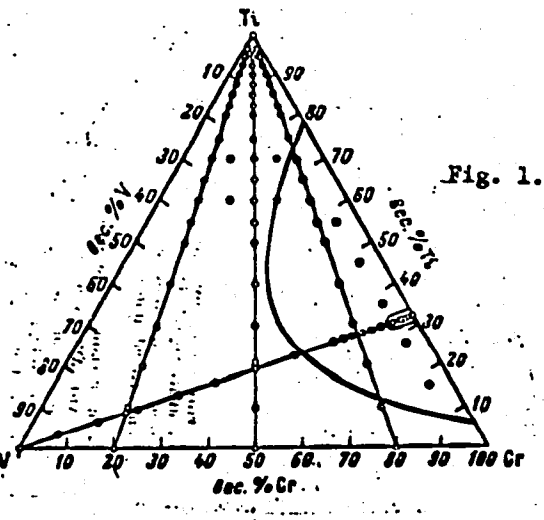

Fig. 1.

SUB CODE: 11/ SUBM DATE: 29Nov65/ ORIG REF: 005/ OTH REF: 002/

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NAZAROV, M.S.; OVSYANNIKOV, N.G.; SOYUZOV, A.A.; MITAISHVILI, A.A.; YUDIN, P.G.; SOLOV'YEV, I.F.; SVIRIDOV, A.A.; RUMYANTSEV, S.M.; KOLICHENKO, K.N.; NIKULIN, M.R.; ORLOV, D.A.; MAYORSKIY, G.I.; SEMENOV, I.Ya.; SUTYRIN, M.A.; KOVALEV, A.I.; VLASOV, A.A.; LEVIN, Ya.L.; KLIMOVITSKIY, A.Z.; METAL'NIKOV, G.F.; PANUSHKIN, G.P.; CHECHETKIN, A.V.; MIKHEYEV, V.D.; KOLOKOL'NIKOV, K.A.; MOISEYEVA, A.I.; TIRON, G.I.; KRYLOVA, V.F.; GOFMAN, Ya.M.; BUDCHANOV, B.F.

K.I. Korshunova; an obituary. Rech. transp. 20 no.12:39 D '61. (MIRA 14:12)
(Korshunova, Kseniia Ivanovna, 1910-1961)

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BUDEANU, E.; TOMA, A.; BUDEANU, C.

Chemistry and experimental chemotherapy of the isonicotinoylhydrazone of ethyivanillin. p. 319.

STUDDI SI CERTARI STIMTIPICE. SHIME. Iasi, Rumania
Vol. 8, no. 1, 1957

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

Uncl.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, Constantin H.; BUDEANU, Elena

Azomethines and chalcones derived from para-aminoacetophenone.
Studii chemie Iasi 10 no.2:284-302 '59. (EEAI 10:1)

1. Academia Republicii Populare Romine, Filiala Iasi; Institutul de Chimie "Petru Poni."
(Methylenimine) (Aminoacetophenone) (Chalcone)

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BUDBERG, V.Yu.; GOYUNOV, K.D.; BLAGODARNYY, N.I.

Device for making the reinforcement framework to be used in reinforced concrete water conduit sections. Sbor. mat. o nov. tekh. v stroi. 16 no.10:14-15 '54. (MIRA 8:2)
(Pipe, Concrete)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDBERG, V.Yu., kandidat tekhnicheskikh nauk.

Method of obtaining calculated strength of concrete in several hours. Stroi.prom. 32 no.5:43-45 My '54. (MIRA 7:6)
(Concrete)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDBERG, V.Yu., kandidat tekhnicheskikh nauk.

Experimental use of single unit metal forms. Stroi.prom. 32 no.8: 46 Ag '54. (MLRA 7:8)

1. Dmitrovskiy zavod MPS.
(Reinforced concrete construction--Formwork)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

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BUDBERG, V.Yu., kand.tekhn.nauk; IVANOV-DYATLOV, A.I., kand.tekhn.nauk

New techniques in wire-reinforced concrete span construction. Avt. dor. 20 no.12:10-11 D '57. (MIRA 12:4)
(Bridges, Concrete) (Reinforced concrete construction)

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BUDBERG, V.IU.; BLAGODARNYI, N.I.; GORIUNOV, K.D.; TROITSKIY, V.P.; UTKIN, IA.M.

Solid metal forms. Suggested by V.IU.Budberg, N.I.Blagodarnyi K.D.Goriunov, V.P.Troitskii, IA.M.Utkin. Rats.i izobr. predl.v stroi. no.8:29-31 '58. (MIRA 13:3)

1. Po materialam Ministerstva transportnogo stroitel'stva SSSR.
(Concrete construction—Formwork)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

SOV/97-58-8-3/13

AUTHOR: Budberg, V.Yu., Candidate of Technical Sciences

TITLE: Mass Production of Pre-cast Pre-stressed Reinforced Concrete Bridge Units (Potochnoye proizvodstvo predvaritel'no napryazhennykh zhelezobetonnykh mostovykh proletnykh stroyeniy)

PERIODICAL: Beton i Zhelezobeton, 1958, Nr 8, pp 291-293 (USSR)

ABSTRACT: Bridge units used for the construction of a metro. railway bridge across the River Moskva are manufactured by the Dmitrovskiy Plant for reinforced concrete products. A detailed account of the manufacturing processes of these various pre-cast pre-stressed bridge constructions spanning 22.2 m is described in this article. The batch reinforcement of bridge units system TsNIIS was grouted in by injecting only near to supports where they are placed inside metal tubes. Further along, the reinforcement was protected against corrosion by a layer of concrete placed in position after tensioning. At present, the factory is producing bridge units as illustrated in Figure 1. It differs from previous construction in that the batch reinforcement is situated in channels formed in concrete and is tensioned as soon as the concrete reaches the strength of at least

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Mass Production of Pre-cast Pre-stressed Reinforced Concrete Bridge Units

340 kg/cm^2. The shortcoming of the first type is the troublesome injecting (grouting) and of the second type the unsatisfactory protection of the reinforcement against corrosion. In both cases, the trough-shaped construction of the beam resisting bending does not seem to be very economical. Figure 2 illustrates the scheme of the main workshop of this concreting factory. Figure 3 shows metal form consisting of solid base and two openable sides. The weight of this form is 8 tons. The form is being transported on two bogies of 30-ton capacity each. The concrete mix, including the concrete part of the anchoring, has the following composition (per 1 m^3 of concrete): cement with activity of 600 - 460 kg; coarse aggregate up to 30 mm - 1 100 kg; sand - 610 kg, water - 230 litres; calcium chloride - 9.2 kg. For vibration, electrical vibrators, I-21, are used. The curing takes place in a tunnel kiln at a temperature of not more than 60 - 65 °C. The author of this article recommends the following improvements: firstly, an additive to accelerate hardening

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Mass Production of Pre-cast Pre-stressed Reinforced Concrete Bridge Units

of the concrete and, secondly, alteration of the kiln into two sections. Labour and time requirements for the production of these units are tabulated.
There are 2 figures and 1 table.

Card 3/3

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BUDBERG, V.Yu., kand.tekhn.nauk; IVANOV-DYATLOV, A.I., kand.tekhn.nauk

Railroad-bridge span structures built of standardized prestressed construction elements. Vop.tip.most.soor. no.4:95-114 '59. (MIRA 13:8)

(Railroad bridges)
(Prestressed concrete construction)

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BUDBERG, V.Yu., kand.tekhn.nauk; IVANOV-DYATLOV, A.I., kand.tekhn.nauk

Bridge span structures made of standardized elements. Transp.stroi. 9 no.6:30-32 Je '59. (MIRA 12:11)

(Birdges, Concrete)

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BUDCHANOV, B.

The "Nevel'skoi" in this navigation season. Rech. transp. 23 no.11:20-22 N '64. (MIRA 18:3)

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BOZHEDOMOV, V.I.; BUDCHANOV, B.

Quality and speed are the mottoes of competition. Rech. transp. 24 no.6:16-17 '65. (MIRA 18:8)

1. Kapitan teplokhoda "Ozernyy-95" (for Bozhedomov). 2. Korrespondent zhurnala "Rechnoy transport" (for Budchanov).

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDCHANOV, L. A.

Microdetermination of total and free acids in gastric juice. P. P. Gorbenko, I. A. Budchanov, and P. I. Velichkovskii. Klin. Med. (U.S.S.R.) 21, No. 10, 45-50(1953).—One cc. instead of the customary 10 cc. is used. When the total acidity is calcd., it is necessary to subtract 0.05 cc. from the total vol. of consumed alkali because that amt. is used up during the change of the color. Without this correction the error is 5%. No correction is necessary when titrating for free acid. A. Mirkin

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDCHANOV, I.A.; DUDCHENKO, M.A.

Effect of weak mineral waters of "Naftusia" spring no.2 at the Truskavets resort on diuresis and calcium, chloride, and nitrogen excretion. Vop.kur. fizioter. i lech.fiz.kul't. 21 no.2:32-34 Ap-Je '56. (MLRA 9:9)

1. Iz Truskavetskogo tsentral'nogo voyennogo klinicheskogo sanatoriya (nachal'nik V.U.Yeremin)
(TRUSKAVETS--MINERAL WATERS) (DIURETICS AND DIURESIS)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDCHANOV, I. A.

BUDCHANOV, I. A.: "The effect of mineral water from No 1 Truskavets on the secretary and evacuatory funtions of the dog's stomach." Min Higher Education Ukrainian SSR. L'vov Zooveterinary Inst. L'vov, 1956. (Dissertation for the degree of Candidate in Biological Sciences)

SO: Knizhnaya Letopis', No 36, 1956, Moscow.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDCHENKO, N.

Use hydraulic mining in coal strip mines. Sov. shakht. 13 no.3: 6-7 Mr '64. (MIRA 17:3)

1. Starshiy inzh. upravleniya otkrytykh rabot kombinata Kuzbassugol', Kemerovo.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDCHENKO, N.I., gornyy inzh.

Ways of increasing labor productivity at the "Kedrovskii" coal mine of the Kemerovugol' Trust. Ugol' 39 no.3:19-21 My'64. (MIRA 17:5)

1. Kombinat Kuzbassugol'.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDCHENKO, N.I., gornyy inzh.

Expansion of strip mining in the Kuznetsk Basin during the current seven-year period. Ugol' 36 no.5:35-39 My '61. (MIRA 14:5)

1. Kombinat Kuzbassugol'.
(Kuznetsk Basin—Strip mining)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDDEUSOVA, Nora.

Physical training of older women. Cesk.gyn.26[40] no.1/2:27-30 F '61.

1. Katedra gymnastiky Institutu telesne vychovy a sportu KU v Praze.

(PHYSICAL EDUCATION AND TRAINING)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

REYMERS, F.E., doktor biol. nauk, otv. red.; BUDDO, I.S., prof., red.; GRUSHKO, Ya.M., prof., red.; SILINSKIY, P.P., red.; SKALON, V.N., prof., red.; KHOROSHIKH, P.P., dots., red.; STRILEVA, G.F., red.; PECHERSKAYA, T.I., tekhn. red.

[Conservation in Siberia; materials]Okhrana prirody Sibiri; materialy. Irkutsk, Irkutskoe knizhnoe izdatel'stvo, 1959. 190 p. (MIRA 15:7)

1. Sibirskaya konferentsiya po okhrane prirody, 1st, 1958. 2. Predsedatel' Vostochno-Sibirskogo otdela Geograficheskogo obshchestva SSSR (for Silinskiy). 3. Irkutskiy sel'skokhozyaystvennyy institut (for Skalon). 4. Irkutskiy meditsinskiy institut (for Grushko). 5. Vostochno-Sibirskiy filial Akademii nauk SSSR (for Reymers). 6. Irkutskiy universitet (for Khoroshikh).

(Siberia—Conservation of natural resources—Congresses)

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BUDEA, N.

BUDEA, N.

"Radiolocation." p. 18, (AVIATIA SPORTIVA, Vol. 5, No. 6, June 1954, Bucuresti, Rumania)

SO: MonthlyList of East European Accessions, (EEAL), LC, Vol. 4, No. 1 Jan. 1955, Uncl.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

Budeanu, Constantin

5

Sulfonamides. II. The effect of some isothiocyanates on *p*-aminobenzenesulfonamide. C. V. Gheorghiu, Constantin Budeanu, and Elena Budeanu. *Acad. rep. populare Romîne, Filiala Iaşi, Studii cercetări ştiinţ.* 4, No. 1-4, 163-8(1953); cf. *ibid.* 2, No. 314, 211(1951); Ganopathi, *C.A.* 33, 2495[9].—For the purpose of obtaining a new antituberculous product, a series of R.NH.C(S).NH.C_6H_4.-SO_2.NH_2 compds. were prepd. Preliminary biol. tests demonstrated that only the *N-o-* and *p*-tolyl derivs. have an antituberculous effect, the para isomer being even more effective than the strongest *p*-aminosalicylate. Only the substituted sulfamides in the amide grouping have a bactericidal effect. III. The antituberculous effect of *N-p*-tolyl-*N'*-*p*-sulfamoylphenylthiourea (C.G.B. 18). C. V. Gheorghiu, A. Toma, Constantin Budeanu, Elena Budeanu, and Grigore Stavri. *Ibid.* 169-78.—In a diln. of $10^{-5}M$ C.G.B. 18 *in vitro* has a bactericidal effect on the BCG organism and a partial effectiveness at $0.5 \times 10^{-5}M$. The subcutaneous administration in mice, intravenously infected with the Ratti or H37 bacteria, of 1 mg. daily for a month of C.G.B. 18 has inhibited in all cases the evolution of tuberculous infection. When administered orally, this compd. has given a net protection. None of the mice daily treated orally with 10 mg. for 30-40 days or guinea pigs orally fed 150 mg. daily, in 3 phases, have advanced tuberculosis with visceral dissemination. IV. The antituberculous effect of some derivatives of *N-p*-tolyl-*N'-p*-sulfamoylphenylthiourea. C. V. Gheorghiu, Constantin Budeanu, Elena Budeanu, A. Toma, and Grigore Stavri. *Ibid.* 179-85.—*N-p*-tolyl-*N'*-(*p*-2-thiazolylsulfamoylphenyl)-thiourea (C.G.B. 40) and *N-p*-tolyl-*N'*-[*p*-(acetylsulfamoyl)phenyl]thiourea (C.G.B. 42) were obtained by treating tolyl isothiocyanate with N^1-thiazolylsulfanilamide, and with albucid. These derivs. exhibited an appreciable antituberculous activity *in vitro* at a concn. of $2 \times 10^{-6}M$ whereas the initial sulfamides display but a feeble bacteriostatic effect in concns. of 10^{-3} to $10^{-4}M$. T. Z. D.

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BUDEANU, C.

4

Med

The antituberculous effect of some aromatic *p*-tolylthiocarbamoylamino acids. C. V. Gheorghiu, C. Budeanu, E. Budeanu, and A. Toma. *Acad. rep. populare Romîne, Iaşi, Studii cercetări ştiinţ.* 5, No. 1/2, 113-18(1954).—The condensation products of *m*- and *p*-aminobenzoic acids, as well as sulfanilic and naphthionic acids, with *p*-tolyl isothiocyanate in a concn. of 10^{-4} *M* exhibit an antituberculous action *in vitro*. The *o*-aminobenzoic acid condensation product with *p*-tolyl isothiocyanate is a thiazine deriv.; the 4,5-benzo-2(*p*-tolylamino)-6-keto-*m*-thiazine deriv. has no bacteriostatic effect. T. Z. Dénessy

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, Const. H.; DRUTA, I.D.

Syntheses of anticancerous substances. Pt.4. Anal St Jassy I 10 no.1:45-51 '64.

1. Submitted October 25-28, 1962.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, Const. H.; BUDEANU, Elena; DRUTA, I.D.

Synthesis of anticancerous substances. Pt.5. Anal St Jassy I 10 no.2:159-163 '64.

1. Chair of Organic Chemistry, "Al. I. Cuza" University. Submitted October, 1962.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

Budeanu, C.

Hydrazides. III. The antituberculous action of some isonicotinoyl hydrazones. C. V. Gheorghiu, C. Budeanu, Elena Budeanu, A. Toma, and Gr. Stavri (Yassy Univ., Rumania). *Acad. rep. populare Romîne, Filiala Iaşi Studii cercetări ştiinţ., Ser. I*, 6, No. 1-2, 239-49(1955)(French summary).—The bacteriostatic action on Koch's bacillus of a series of isonicotinoyl hydrazones, *in vitro* and *in vivo*, was found to be similar to that of the hydrazine. Investigated were the isonicotinoyl hydrazones of: *o*-ClC_6H_4CHO; *o*-, *m*-, and *p*-$O_2NC_6H_4CHO$; piperonal; $EtCOPh$; 1-$C_{18}H_7COPh$; and 2-$C_{18}H_7COMe$.

Gary Gerard

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C.

9

Substances with antitubercular action. C. V. Gheorghiu, L. Stoicescu-Crivetz, C. Budeanu, E. Budeanu, M. Alexa-Petrovanu, L. Mândăsescu, N. Constantinescu, A. Toma and G. Stavri (*Rev. Chim., Bucharest*, 1958, 1, No. 1, 97—125).—The antitubercular effects of 88 new substances are measured *in vitro*, and the results are compared with those for known antitubercular drugs. *o*-Halogeno-*p*-aminobenzoic acids (I) are as effective as *p*-aminosalicylic acid (II). The amils of I and II with aromatic aldehydes (but not with *p*-dimethylaminobenzaldehyde) are effective. The azo colours obtained by diazotization of I are ineffective. Other thiosemicarbazones have an activity exceeding that of *p*-acetylaminobenzaldehyde (III), particularly that of *o*-chloro-III. Among the thioureas obtained by the action of isothiocyanates on sulphanilamides the *N*-*p*-tolyl-*N'*-*p*-sulphonamidophenyl-, sulphonthiazolylamidophenyl- and acetylsulphonamidophenyl-thioureas are highly effective. The *p*-tolylthiocarbamoyl radical confers great activity, particularly when introduced into an amine, sulphamide or hydrazide, and *p*-tolylisonicotinoyl thiosemicarbazide is more effective than isonicotinic acid hydrazide. The isonicotinoyl hydrazones are highly effective. (59 references.) (In French.) A. B. DENSHAM.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C.

Sulfonamides. V. The antituberculous action of certain new thioureas, sulfonamide derivatives, and of aromatic amino acids. C. V. Gheorghiu, C. Budeanu, Elena Budeanu, and A. Toma (Univ. Iaşi). *Acad. rep. populare Romîne, studii cercetări chim.* 4, No. 1-2, 47-56(1956); cf. *C.A.* 50, 12287d, 14816g.—Sulfaguanidine and *p*-$CH_3C_6H_4NCS$ (I) are reacted to form *p*-(*p*-$MeC_6H_4NHCSNH)C_6H_4SO_2NHC(:NH)NH_2$, colorless prismatic crystals, m. 189-90°. *p*-(*p*-$MeC_6H_4NHCSNH)C_6H_4SO_2NH(C_4H_4N$-3) was prepd. in an analogous manner, colorless crystals, m. 196-7°. Similarly is prepd. *p*-(*p*-$MeC_6H_4NHCSNH)C_6H_4SO_2NHC:N.CH:CMe.S$, colorless crystals, m. 185-6°.

p-Aminosalicylic acid is treated with I in an acetone soln. to give 2,4-HO(*p*-$MeC_6H_4NHCSNH)C_6H_3CO_2H$ colorless crystals, m. 189-90°; sol. in acetone and EtOH. Similarly prepd. are: *p*-(*p*-$EtC_6H_4NHCSNH)C_6H_4SO_2NH_2$, m. 195-6°; *p*-(*p*-$BuC_6H_4NHCSNH)C_6H_4SO_2NH_2$, m. 195-6°; *p*-(*p*-$EtC_6H_4NHCSNH)C_6H_4SO_2NHC:N.CH:CH.S$, m. 181-2°; *p*-(*p*-$BuC_6H_4NHCSNH)C_6H_4SO_2NHC:N.CH:CH.S$, m. 194-5°; *p*-$(PhNHCONH)C_6H_4SO_2NH_2$, m. 222°; *p*-$(PhNHCONH)C_6H_4SO_2NHC:N.CH:CH.S$, m. 241°; *p*-(*p*-$EtC_6H_4NHCSNH)C_6H_4CO_2H$, m. 196-8°; *p*-(*p*-$BuC_6H_4NHCSNH)C_6H_4CO_2H$, m. 300°; *p*-$[HS(HN:)C]C_6H_4SO_2NH_2$, m. 192°; and *p*-$(S.CH:CMe.N:C)C_6H_4SO_2NH_2$ (II), m. 225-6°. All these substances are highly tuberculostatic *in vitro*, with the exception of II. W. I.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C.H.

RUMANIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11328.

Author : Gheorghiu, C.V., Budeanu, C. H., and Budeanu, E.
Inst : Iasi University
Title : Hydrazides. IV. Synthesis of Several Anils Derived from p-aminoacetophenone and of the Corresponding Isonicotinoyl Hydrazones.

Orig Pub: Anuar Stiint Univ Iasi, Sec I, 1, No 1-2, 301-307 (1955) (in Rumanian with summaries in French and Russian)

Abstract: The action of anils (obtained from p-aminoacetophenone and aromatic aldehydes) with isonicotinoyl hydrazones (II) in boiling alcohol (1-2 min) instead of yielding the expected isonicotinoyl hydrazones of the anils gives the isonicotinoyl hydrazones of the starting aldehydes and I. However, the action of salicylaldehyde (III) on the isoni-

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RUMANIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11328.

cotinoyl hydrazone of I under the above-indicated conditions does yield the isonicotinoyl hydrazone of the corresponding anil, mp 211-212° (from alcohol). Preparation: An alcoholic solution of 2 gms I in 2.64 gms cinnamic aldehyde are refluxed for several minutes; p-cinnamylideneacetophenone, mp 128-129° (from alcohol), is isolated. Similarly, I gives the following anils (the starting aldehyde and the mp in °C of the anil (from alcohol) are given below): p-dimethyl-aminobenzaldehyde, 176-177; anisaldehyde, 125-126; III, 114-116; piperonal, 147. The reaction of 2 mols piperonal with 1 mol I gives 4'-(3'', 4''-methylenedihydroxybenzylidineamino)-3,4-methylenedihydroxy-chalcone, mp 189° (from pyridine). When a mixture of 1.35 gms I and 1.37 gms II in alcohol is refluxed

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RUMANIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11328

10-15 min the isonicotinoyl hydrazone of I is obtained, mp 224-225° (from alcohol). For Communication III see RZhKhimBkh, 1956, 16014.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C.

BUDEANU, C. Observations on the draft standard "Electric and Magnitic Quantities, Units of Measure." p. 9. Vol. 7, no. 10, Oct. 1955. INDUSTRIA TEXTILA. Bucuresti, Rumania.

SOURCE: East European Accessions List (EEAL) LC Vol. 5, No. 6 June 1956

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C.; BUDEANU, E.; TOMA, A.

Antituberculous action of the derivatives of the hydrazide of isonicotinic acid. Note VIII. Comparative study of the chemotherapeutic action of the vanillin and ethyl-vanillin isonicotinoyl hydrazones. In French. p. 185.

REVUE DE CHIMIE. JOURNAL OF CHEMISTRY. (Academia Republicii Populare Romine) Bucuresti, Rumania. Vol. 2, no. 2, 1957.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959.

Uncl.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

RUMANIA/Radio Physics - Radiation of Radio Waves. Transmission Lines and Antennae I.

Abs Jour : Ref Zhur - Fizika, No 7, 1959, 16106

Author : Budeanu, C.I.
Inst : -
Title : Reactive Effects During Radiation Phenomena

Orig Pub : Comun. Acad. RPR, 1957, 7, No 2, 155-162

Abstract : The complex form of the Umov-Poynting vector is applied to the general case of a space, in which emission of radiant energy occurs and in which there exist external electric fields and also finite conductivities. For this case the author studies and derives the exact form of active reactive complex power. The conservation law is verified. Reactive effects are identified, produced by radiation from external fields that occur inside a definite volume; expressions are given for the reactive power for all cases. An application is considered for the case of

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RUMANIA/Radio Physics - Radiation of Radio Waves.
Transmission Lines and Antennae I.

Abs Jour : Ref Zhur - Fizika, No 7, 1959, 16106

dipole oscillator, and the process of absorption of reactive power in space where the radiation occurs is explained.

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BUDEANU, C., ; BUDEANU, E.; TOMA, A.

Action of the isothiocyante of naphthyl upon certain sulfamides (VII) and aromatic amino acids (IV). p. 313.

STUDDII SI CERETARI STIMTIPICE. SHIME. Iasi, Rumania
Vol. 8, no. 1, 1957

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

Uncl.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C. BUDEANU, E.; TOMA, A.

Chemistry and experimental chemotherapy of the isonicotinoylhydrazone of ethyivanillin. p. 319.

STUDDI SI CERTARI STIMTIPICE. SHIME. Iasi, Rumania
Vol. 8, no. 1, 1957

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

Uncl.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C.; ANTONIU, I.; POMIRLEANU, M.

Functioning of an induction motor with squirrel cage under deforming conditions of tension. In French. p.239.

REVUE D'ELECTROTECHNIQUE ET D'ENERGETIQUE. JOURNAL OF ELECTROTECHNICS AND ENERGETICS. (Academia Republicii Populare Romine. Institutul de Energetica) Bucuresti, Rumania
Vol. 3, no. 2, 1958.

Monthly list of Eastern European Accession Index (EEAI) LC vol. 8, No. 11
November 1959
Uncl.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, C.

Report on the principal statements and discussions at the working quarters of the 17th Session of CIGRE. p. 94.

ENERGETICA. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din Rominia si Ministerul Energiei Electrice si Industriel Electrotehnice) Bucuresti, Rumania, Vol. 7, no. 3, Mar. 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, no. 8, Aug. 1959.

Uncl.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, Constantin H.; BUDEANU, Elena

Azomethines and chalcones derived from para-aminoacetophenone.
Studii chemie Iasi 10 no.2:284-302 '59. (EEAI 10:1)

1. Academia Republicii Populare Romine, Filiala Iasi; Institutul de Chimie "Petru Poni."
(Methylenimine) (Aminoacetophenone) (Chalcone)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307220017-9

BUDEANU, Constantin H.

Azo dyes, derivatives of p-aminoacetophenone. Studii chim Iasi 11 no.2:323-335 '60.

1. Academia Republicii Populare Romine, Filiala Iasi, Institutul de chimie "Petru Poni."

(Azo dyes) (Aminoacetophenone)

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BUDEANU, Constantin, inginer-sef adjunct (Bucuresti);

Site investigations and laboratory research on electric power works in Rumania. Energetica Rum 10 no. 10:417-419 O '62.

1. Intreprinderea de cerectari si studii pe teren pentru lucrari energetice.

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Budeanu, Elena

Med

Sulfonamides. II. The effect of some isothiocyanates on *p*-aminobenzenesulfonamide. C. V. Gheorghiu, Constantin Budeanu, and Elena Budeanu. *Acad. rep. populare Romîne, Filiala Iaşi, Studii cercetări ştiinţ.* 4, No. 1–4, 163–8(1953); cf. *ibid.* 2, No. 314, 211(1951); Ganopathi, *C.A.* 33, 2495[9].—For the purpose of obtaining a new antituberculous product, a series of $R.NH.C(S).NH.C_6H_4.SO_2.NH_2$ compds. were prepd. Preliminary biol. tests demonstrated that only the *N-o*- and *p*-tolyl derivs. have an antituberculous effect, the para isomer being even more effective than the strongest *p*-aminosalicylate. Only the substituted sulfamides in the amide grouping have a bactericidal effect. III. The antituberculous effect of *N-p*-tolyl-*N'*-*p*-sulfamoylphenylthiourea (C.G.B. 18). C. V. Gheorghiu, A. Toma, Constantin Budeanu, Elena Budeanu, and Grigore Stavri. *Ibid.* 169–78.—In a diln. of $10^{-5}M$ C.G.B. 18 *in vitro* has a bactericidal effect on the BCG organism and a partial effectiveness at $0.5 \times 10^{-6}M$. The subcutaneous administration in mice, intravenously infected with the Ratti or H37 bacteria, of 1 mg. daily for a month of C.G.B. 18 has inhibited in all cases the evolution of tuberculous infection. When administered orally, this compd. has given a net protection. None of the mice daily treated orally with 10 mg. for 30–40 days or guinea pigs orally fed 100 mg. daily, in 3 phases, have advanced tuberculosis with visceral dissemination. IV. The antituberculous effect of some derivatives of *N-p*-tolyl-*N'*-*p*-sulfamoylphenylthiourea. C. V. Gheorghiu, Constantin Budeanu, Elena Budeanu, A. Toma, and Grigore Stavri. *Ibid.* 179–85.—*N-p*-tolyl-*N'*-(*p*-2-thiazolylsulfamoylphenyl)-thiourea (C.G.B. 40) and *N-p*-tolyl-*N'*-[*p*-(acetylsulfamoyl)phenyl]thiourea (C.G.B. 42) were obtained by treating tolyl isothiocyanate with N^1-thiazolylsulfanilamide, and with albucid. These derivs. exhibited an appreciable antituberculous activity *in vitro* at a concn. of $2 \times 10^{-6}M$ whereas the initial sulfamides display but a feeble bacteriostatic effect in concns. of 10^{-5} to $10^{-4}M$. T. Z. D.

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BUDEANU F.

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Med

The antituberculous effect of some aromatic *p*-tolylthiocarbamoylamino acids. C. V. Gheorghiu, C. Budeanu, E. Budeanu, and A. Toma. *Acad. rep. populare Romîne, Iaşi, Studii cercetări ştiinţ.* 5, No. 1/2, 113–18(1954).—The condensation products of *m*- and *p*-aminobenzoic acids, as well as sulfanilic and naphthionic acids, with *p*-tolyl isothiocyanate in a concn. of 10^{-5} *M* exhibit an antituberculous action *in vitro*. The *o*-aminobenzoic acid condensation product with *p*-tolyl isothiocyanate is a thiazine deriv.; the 4,5-benzo-2(*p*-tolylamino)-6-keto-*m*-thiazine deriv. has no bacteriostatic effect. T. Z. Déneszy

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Budeanu, E.

Hydrazides. III. The antituberculous action of some isonicotinoyl hydrazones. C. V. Gheorghiu, C. Iludeanu, Elena Budeanu, A. Toma, and Gr. Stavri (Yassy Univ., Rumania). *Acad. rep. populare Romîne, Filiala Iaşi Studii cercetări ştiinţ., Ser. I*, 6, No. 1-2, 239-49(1955)(French summary).—The bacteriostatic action on Koch's bacillus of a series of isonicotinoyl hydrazones, *in vitro* and *in vivo*, was found to be similar to that of the hydrazine. Investigated were the isonicotinoyl hydrazones of: *o*-ClC_6H_4CHO; *o*-, *m*-, and *p*-$O_2NC_6H_4CHO$; piperonal; $EtCOPh$; 1-$C_{10}H_7COPh$; and 2-$C_{10}H_7COMe$.

Gary Gerard

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BUDEANU, E.

RUMANIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11328.

Author : Gheorghiu, C.V., Budeanuu, C. H., and Budeanu, E.
Inst : Iasi University
Title : Hydrazides. IV. Synthesis of Several Anils Derived from p-aminoacetophenone and of the Corresponding Isonicotinoyl Hydrazones.

Orig Pub: Anuar Stiint Univ Iasi, Sec I, 1, No 1-2, 301-307 (1955) (in Rumanian with summaries in French and Russian)

Abstract: The action of anils (obtained from p-aminoacetophenone and aromatic aldehydes) with isonicotinoyl hydrazones (II) in boiling alcohol (1-2 min) instead of yielding the expected isonicotinoyl hydrazones of the anils gives the isonicotinoyl hydrazones of the starting aldehydes and I. However, the action of salicylaldehyde (III) on the isoni-

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RUMANIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11328.

cotinoyl hydrazone of I under the above-indicated conditions does yield the isonicotinoyl hydrazone of the corresponding anil, mp 211-212° (from alcohol). Preparation: An alcoholic solution of 2 gms I in 2.64 gms cinnamic aldehyde are refluxed for several minutes; p-cinnamylideneacetophenone, mp 128-129° (from alcohol), is isolated. Similarly, I gives the following anils (the starting aldehyde and the mp in °C of the anil (from alcohol) are given below): p-dimethyl-aminobenzaldehyde, 176-177; anisaldehyde, 125-126; III, 114-116; piperonal, 147. The reaction of 2 mols piperonal with 1 mol I gives 4'-(3'', 4''-methylenedihydroxybenzylidineamino)-3,4-methylenedihydroxy-chalcone, mp 189° (from pyridine). When a mixture of 1.35 gms I and 1.37 gms II in alcohol is refluxed

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RUMANIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11328

10-15 min the isonicotinoyl hydrazone of I is obtained, mp 224-225° (from alcohol). For Communication III see RZhKhimBkh, 1956, 16014.

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BUDEANU, E.

9

Substances with antitubercular action. C. V. Gheorghiu, I. Sticescu-Crivetz, C. Budeanu, E. Budeanu, M. Alexa-Petrovanu, L. Mândăsescu, N. Constantinescu, A. Toma and G. Stavri (*Rev. Chim., Bucharest*, 1958, 1, No. 1, 97—125).—The antitubercular effects of 88 new substances are measured *in vitro*, and the results are compared with those for known antitubercular drugs. p-Halogeno-*p*-aminobenzoic acids (I) are as effective as *p*-aminosalicylic acid (II). The anils of I and II with aromatic aldehydes (but not with *p*-dimethylaminobenzaldehyde) are effective. The azo colours obtained by diazotization of I are ineffective. Other thiosemicarbazones have an activity exceeding that of *p*-acetylaminobenzaldehyde (III), particularly that of *o*-chloro-III. Among the thioureas obtained by the action of *iso*thiocyanates on sulphanilamides the *N*-*p*-tolyl-*N'*-*p*-sulphonamidophenyl-, sulphamthiazolylaraidophenyl- and acetylsulphonamidophenyl-thioureas are highly effective. The *p*-tolylthiocarbamoyl radical confers great activity, particularly when introduced into an amine, sulphamide or hydrazide, and *p*-tolyl*iso*nicotinoyl thiosemicarbazide is more effective than *iso*nicotinic acid hydrazide. The *iso*nicotinoyl hydrazones are highly effective. (59 references.) (In French.) A. B. DENSHAM.

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Sulfonamides. V. The antituberculous action of certain new thioureas, sulfonamide derivatives, and of aromatic amino acids. C. V. Gheorghiu, C. Budeanu, Elena Budeanu, and A. Toma (Univ. Iaşi). *Acad. rep. populare Romîne, studii cercetări chim.* 4, No. 1-2, 47-58(1955); cf. *C.A.* 50, 12297d, 14811g.—Sulfaguanidine and *p*-$CH_3C_6H_4NCS$ (I) are reacted to form *p*-(*p*-$MeC_6H_4NHCSNH$)-$C_6H_4SO_2NHC(:NH)NH_2$, colorless prismatic crystals, m. 189-90°. *p*-(*p*-$MeC_6H_4NHCSNH)C_6H_4SO_2NH(C_4H_3N_2S)$ was prepd. in an analogous manner, colorless crystals, m. 196-7°. Similarly is prepd. *p*-(*p*-$MeC_6H_4NHCSNH$)-$C_6H_4SO_2NHC:N.CH:CMe.S$, colorless crystals, m. 165-6°.

p-Aminosalicylic acid is treated with I in an acetone soln. to give 2,4-HO(*p*-$MeC_6H_4NHCSNH)C_6H_3CO_2H$ colorless crystals, m. 189-90°, sol. in acetone and EtOH. Similarly prepd. are: *p*-(*p*-$EtC_6H_4NHCSNH)C_6H_4SO_2NH_2$, m. 19[illegible]6°; *p*-(*p*-$BuC_6H_4NHCSNH)C_6H_4SO_2NH_2$, m. 195-9°; *p*-(*p*-$EtC_6H_4NHCSNH)C_6H_4SO_2NHC:N.CH:CH.S$, m. 18[illegible]2°; *p*-(*p*-$BuC_6H_4NHCSNH)C_6H_4SO_2NHC:N.CH:CH.S$, m. 194-5°; *p*-$(PhNHCONH)C_6H_4SO_2NH_2$, m. 222°; *p*-$(PhNHCONH)C_6H_4SO_2NHC:N.CH:CH.S$, m. 241°; *p*-(*p*-$EtC_6H_4NHCSNH)C_6H_4CO_2H$, m. 190-8°; *p*-(*p*-$BuC_6H_4NHCSNH)C_6H_4CO_2H$, m. 300°; *p*-$HS(HN:)CC_6H_4SO_2NH_2$, m. 192°, and *p*-$(S.CH:CMe.N:C)C_6H_4SO_2NH_2$ (II), m. 225-6°. All these substances are highly tuberculostatic *in vitro*, with the exception of II.—W. J.

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BUDEANU, E.; BUDEANU, C.; TOMA, A.

Antituberculous action of the derivatives of the hydrazide of isonicotinic acid. Note VIII. Comparative study of the chemotherapeutic action of the vanillin and ethyl-vanillin isonicotinoyl hydrazones. In French. p. 185.

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Uncl.

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BUDEANU, E.; BUDEANU, C.; TOMA, A.

Action of the isothiocyante of naphthyl upon certain sulfamides (VII) and aromatic amino acids (VL). p. 313.

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

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BUDEANU, Elena; MOTAS, Marioara; POPESCU, Ortansa

Some compounds of isonicotinic hydrazide and isonicotinoylhydrazones with phosphoric acid. Anal St Jassy I 10 no.1:53-58 '64.

1. Submitted October 26-27, 1963.

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BUDEANU, Const. H.; BUDEANU, Elena; DRUTA, I.D.

Synthesis of anticancerous substances. Pt.5. Anal St Jassy I 10 no.2:159-163 '64.

1. Chair of Organic Chemistry, "Al. I. Cuza" University. Submitted October, 1962.

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