ALKKSANDROV, P.A., kand.arkhitektury; GROMOVA, N.M., kand.farmatsevticheskikh nauk; KAPITSA, N.K., arkhitektor; SAMSONOV, G.A., arkhitektor; DANOVSKIY, V.F., arkhitektor, nauchnyy red.; OSKLEDETS, Z.M., red. izd-va; GILENSON, P.G., tekhn.red.

[Auxiliary therapeutic departments of general hospitals; manual on the planning of pharmacies, laboratories, and physical therapy departments] Lechebno-vspomogatel nye otdelenia bol nits obshchego tipa; posobie dlia proektirovaniia aptek, laboratorii, fizioterapevticheskikh otdelenii. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 122 p. (MIRA 14:2) (HOSPITALS-CONSTRUCTION)

		In a	new	hospit	al. (H	Zdor OSPITA	ov'e 6 LSFU	no.4:22 RNITURE,	2-23 A	lp 60. IPMENT	ETC	(MIRA	13:8)	)	
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On types of rural hospitals. Sov. zdrav. 19 no. 8:35-47 '60.
(HOSPITALS, RURAL)

# SAMSONOV, G.I. "Stamping parts from sheet metal without and with small waste." V.A.Volosatov. Reviewed by G.I.Samsonov. Avt.trakt.prom. no.9:3233 S '54. (MIRA 7:10) 1. Moskovskiy avtozavod imeni Stalina. (Volosatov, V.A.) (Sheet-metal work)

ZVYAGINTSEV, Yu.Ye.; SAMSONOV, G.I., inzh., retsenzent; LIBERMAN, Ye.G., doktor ekon. nauk, red.; SALYANSKIY, A.A., red. izd-va; DEMKINA, N.F., tekhn.red.

[Operational planning in pressworking shops] Operativnoe planirovanie v pressovykh tsekhakh. Moskva, Mashgiz, 1963. 136 p. (MIRA 16:7)

(Machinery industry-Management) (Sheet-metal work)

BRUK, Ya.S.; SAMSONOV, G.N.; SOKOLOV, A.I.

Sets of equipment with the K-52M narrow-range cutter-loader

Sets of equipment with the K-52M narrow-range cutter-loaders. Biul. tekn.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.3:13-15 '64. (MIRA 17:9)

SAMSONOV, Georgiv Nikiforovich; EL'KIN, Iosif Lazarevich; MERKULOV, Nikolay Yakovlevich; BOGUTSKIY, Nikolay Vasil'yevich; KAZAKOV, Stanislav Semenovich; IVANOV, Ivan Konstantinovich; AERAMOV, V.I., inzh., otv. red.

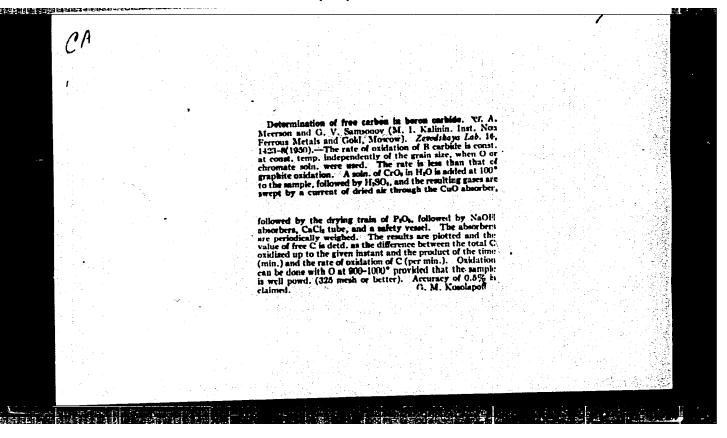
[The K-52M (1K-52M) narrow-cut cutter-loader] Uzkozakhvatnyi kompleks K-52M (1K - 52M). Moskva, Nedra, 1964. 207 p.
(MIRA 18:4)

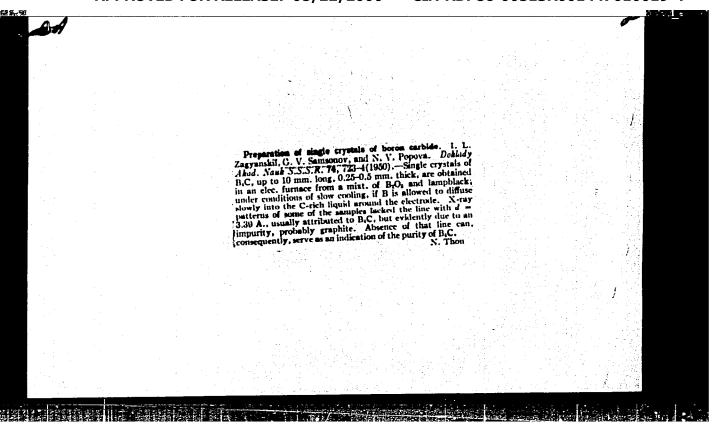
MANZHULA, N.G.; SAVEL'YEV, I.P.; GUDYRIN, Yu.N.; SAMSONOV, G.N.

Testing the IK-52sh cutter-loader with the M-87 support. Ugol' 40 no.2:39-43 F '65. (MIRA 18:4)

1. Shakhtoupravleniye No.1 "Znamya kommunizma" tresta Krasnoluchugol' kombinata Donbassantratsit (for Manzhula). 2. Luganskiy sektor Gosudarst-wennogo proyektno-konstruktorskogo i eksperimental'nogo instituta ugol'nogo mashinostroyeniya (for Savel'yev, Gudyrin). 3. Gosudarstvennyy proyektno-konstruktorskiy i eksperimental'nyy institut ugol'nogo mashinostroyeniya (for Samsonov).

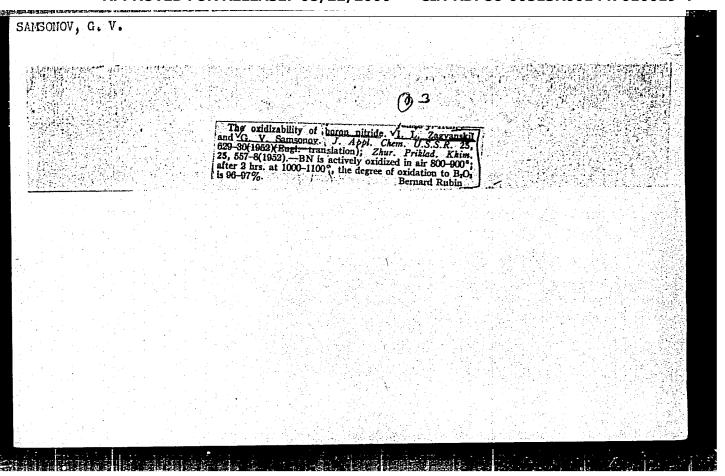
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SLAVINSKIY, M.P., professor, doktor [deceased]; FILIN, N.A., professor, doktor, retsenzent; SHPICHINETSKIY, kandidat tekhnicheskikh nauk, retsenzent; ROGEL'BERG, I.L., inzhener, retsenzent; SAMSONOV, G.V., redaktor; KAMAYEVA, O.M., redaktor; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Physical and chemical properties of elements] Fiziko-khimicheskie svoistva elementov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1952, 763 p. (MIRA 9:12) (Chemistry, Metallurgic) (Chemical elements)



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n the same reaction.	was found that the reaction 270 - 200 - 200 additive and is composed of successive reactions in which Zr203 and Zr0 are formed. The practical temp range in which the reaction with formation of ZrC will proceed in a vacuum was established and the will proceed in a vacuum was established and the lintermediate reactions were discovered. It is possible to obtain by the vacuum process ZrC which contains no N or O admixtures. A fundamental error was found in the work of Prescott and Hincke (J. Chem. Soc	(Chemistry aining Zire rison; G. B. Is and Gold Frik Khim, beerving the

SAMSONOV, G.	٧.			235162
<b>.</b>		and by wedging al. This contradicts alliterature that be trusive phases. I Submitted by Acad	"Dok Ak Nauk SSS  Measures microha Ta B2, CnB, WB2, examn and X-ray, structure of all cochem properties conclusion that 1	USER/Met "Microha High-Mel Inst of J Kalinin
		of B atoms into lattices of high-melting met and by wedging slip planes of these metals. This contradicts assumption accepted in tech literature that borides do not belong to intrusive phases. Includes several micrograph Submitted by Acad G. G. Uragov 18 Jul 52.	icroha icroha , WB2, K-rsy of all of all that l	USSR/Metallurgy - High-Melting Metals 11 Sep 52 "Microhardness of the Borides and Nitrides of High-Melting Metals," G. V. Samsonov, Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin
		lattices of high-melting metals. slip: planes of these metals. sassumption accepted in tech borides do not belong to in- Includes several micrographs. id G. G. Uragov 18 Jul 52.	R" Vol 86, N rdness of Ti TiN, ZrN an analysis sho specimens. s of borides corides are i	High-Meit the Borid s," G. V.
	رم	iigh-meltii these me ccepted in t belong t t balong t	No 2, pp 329-332  iB2, ZrB2, VB2, CbB2, ad TeN. Microscopic  wed single-phase Tabulates physi- and nitrides. States formed by intrusion 235762	m-Melting Metals II Sep Borides and Nitrides o. G. V. Samsonov, Moscowtals and Gold imeni M. 1
	235162	melting metals. se metals. ted in tech long to in- micrographs. Jul 52.	VB2, CbB Croscop1 croscop1 phase phys1- des. Sta intrus1ou 235762	11 Sep : rides of Moscov

FILYAND, M.A.; SEMENOVA, Ye.I.; POGODIN, S.A., zasluzhennyy deyatel nauki i tekhniki, professor, doktor, retsenzent; METERSON, G.A., professor, doktor, laureat Stalinskoy premii; SAMSONOV, G.V., redaktor; KAMATEVA, O.M., redaktor; MIKHAYLOVA, V.V., tekhnicheskiy redaktor.

[Properties of rare elements; handbook] Svoistva redkikh elementov; spravochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 414 p. (MIRA 7:11) (Chemical elements)

SAMSOHOV, G. V.

Physical Chemistry, Physicochemical Analysis (12493)

Izv. Sektora Fiz.-Ehim. Analiza Inst. Obshch. 1 Hoorgan. Khimil Ali SSSR, Vol. 29, 1953, pp 92-103

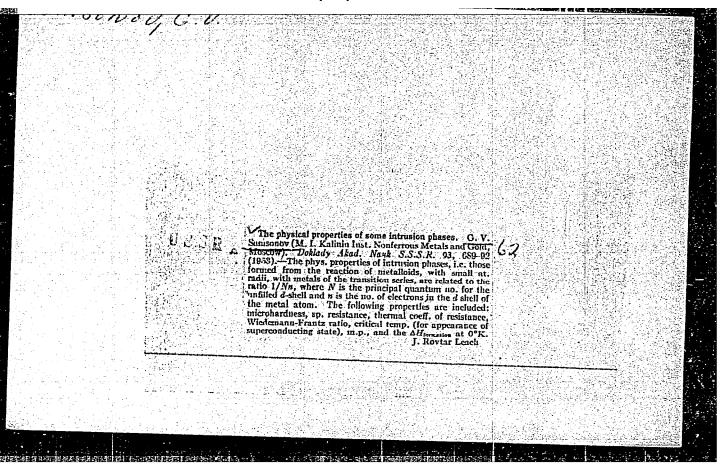
Meyerson, G. A.; Sansonov, G. V.

Investigation of Fusibility Diagrams of the System Boron-Carbon and the Nature of the Phases in This System

Studied the above system and determined its physical constants.

SO: Referativny Zhurnal -- Khimiya, No. 2, 1954 (W-30907)

Battelle Technical Review July 1954 Metals-Metallography, Transformations, and Structures	10200* Heats of Activation During the Diffusion of Boron Into Tungsten and Molybdenum. (Russian.) G. V. Samsonov. Doklady Akademii Nauk SSSR, v. 93, no. 5, Dec. 11, 1953, p. 859-861 + 1 plate.  Specimens were heated in a B bath from 900 to 1300 C. Results reveal some regularity as observed for variation of other physical properties with change in completeness of the electron d-level of a transition metal and strength of retention of electrons by a metalloid. Graph, table, micrograph. 3 ref.

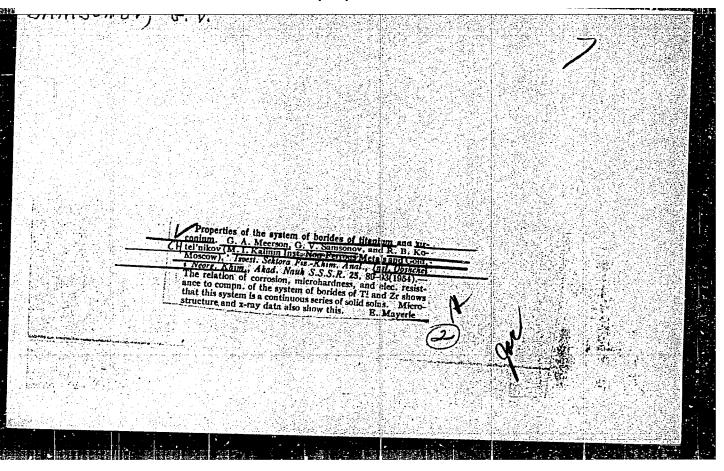


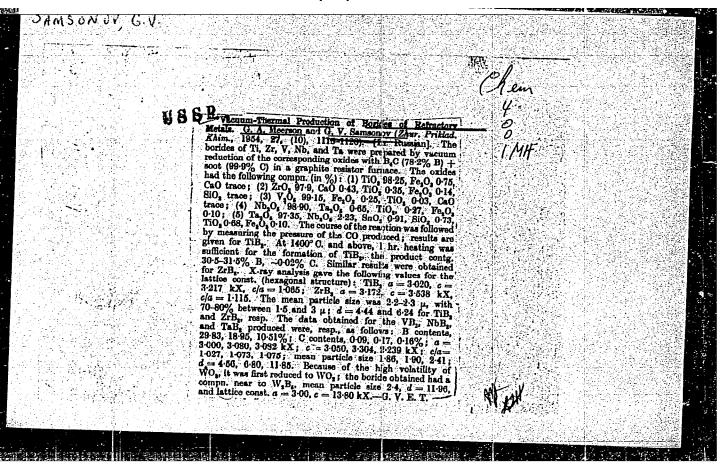
SAMSOMOV, G.V.

ZELIKMAN, A.N.; SAMSONOV, G.V.; KREYN, O.Ye.; STEPANOV, I.S., inzhener, retsenzent; Tanamayev, I.V., retsenzent; POGODIN, S.A., professor, doktor, saslushennyy deyatel nauki i tekhniki, retsenzent; RODE, Ye.Ye., professor, doktor, retsenzent; ABRIKOSOV, N.Kh, doktor khimicheskikh nauk, retsenzent; SHAMRAY, F.I., doktor khimicheskikh nauk, retsenzent; MOROZOV, I.S., kandidat khimicheskikh nauk, retsenzent; BOOM, Ye.A., kandidat khimicheskikh nauk, retsenzent; NIKOLAYEV, N.S., kandidat khimicheskikh nauk, retsenzent; ZVORYKIN, A.Ya, kandidat khimicheskikh nauk, retsenzent; BASHILOVA, N.I., kandidat khimicheskikh nauk, retsenzent; VYSOTSKAYA, V.N., redaktor; KAMAYEVA, O.M., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor

[Metallurgy of rare metals] Metallurgiia redkikh metallov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 414 p. (MIRA 7:9)

1. Chlen-korrespondent Akademii nauk SSSR (for Tananayev)
(Metals, Rare-Metallurgy)





USSR/ Chemistry Solubility

Card

: 1/1

Authors

! Zhdanov, G. S., Meerson, G. A., Zhuravlev, N. N., and Samsonov, G. V.

Title

Solubility of boron and carbon in boron carbide B12C3 (B4C)

Periodical

: Zhur. fiz. khim. 28, Ed. 6, 1076 - 1082, June 1954

Abstract

X-ray investigations were conducted to determine the possibility and solubility limits for B and C in BLC and to explain the mechanism of the latter with respect to the solubility of components in a covalent chemical compound. The fact that the solution takes place by displacement of C-atoms in 1b positions by B-atoms and consequent formation of  $B_{\mbox{\scriptsize LL}} C$  of the  $B_{\mbox{\scriptsize LL}} C_{\mbox{\scriptsize LL}} C$ roentgenograms. More detailed results are given in graphs. Eleven references: 7 USSR, 2 USA and 2 German. Table, drawing, illustrations.

Institution : The M. I. Kalinin Institute of Non-Ferrous Metals and Gold and the

Mechanical Institute, Moscow

Submitted

September 19, 1953

SAMSENUY, G.V.

Category: USSR/Solid State Physics - Phase transformations in solid bodies

2-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1186

Author : Samsonov, G.V., Tseytina, N.Ya.

Title : Concerning the Mechanism of Sufface Saturation of Iron and Steel by Boron

Orig Pub: Fiz. metallov i metallovedenie, 1955, 1, No 2, 303-306

Abstract : Based on the investigations of the microstructure and the microhardness of

specimens of Armco-iron and of steel No .3, subjected to saturation by Boron from the solid phase at various temperatures (700 -- 1200°) and at various soakings (1 -- 17 hours), the authors believe that in pure iron there is a diffusion reaction of boron with formation of iron boride FeB, causing relatively high micro-hardness of the saturated layer (on the order of 730 -- 790 kg/mm²), and that in the presence of carbon the reaction consists mostly of diffusion on the boundaries of the grain of the solid solution of complicated carbo borides, causing the high hardness of the saturated layer (on the order

of 1400 -- 2100 kg/mm<sup>2</sup>).

Card : 1/1

#### CIA-RDP86-00513R001447010019-4 "APPROVED FOR RELEASE: 08/22/2000

SAMSONOV, GV.

USSR/Solid State Physics - Structural Crystallography, E-3

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34654

Author: Samsonov, G. V., Zhuravlev, N. N.

Institution: Nore

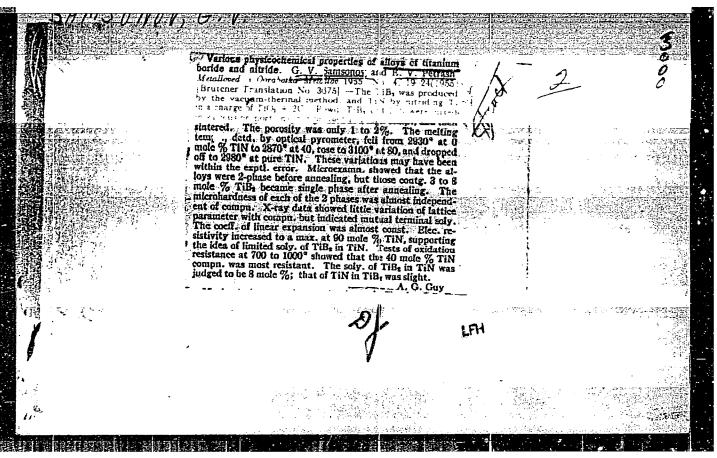
Title: On Aluminum Boride AlB<sub>12</sub>

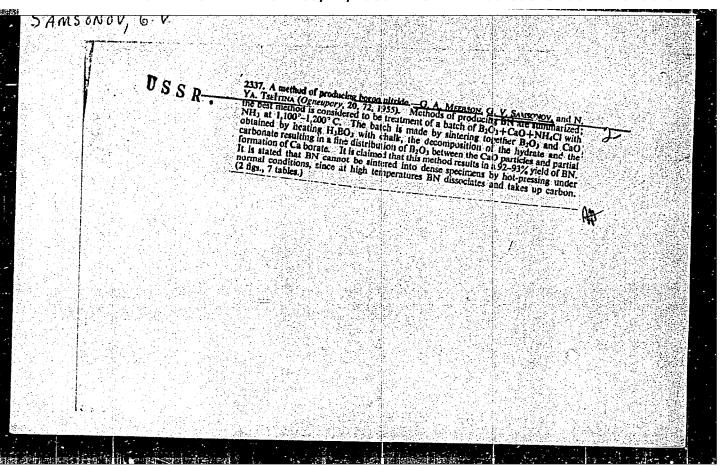
Original Periodical: Fiz. metallov i metallovedeniye, 1955, 1, No 3, 564-566

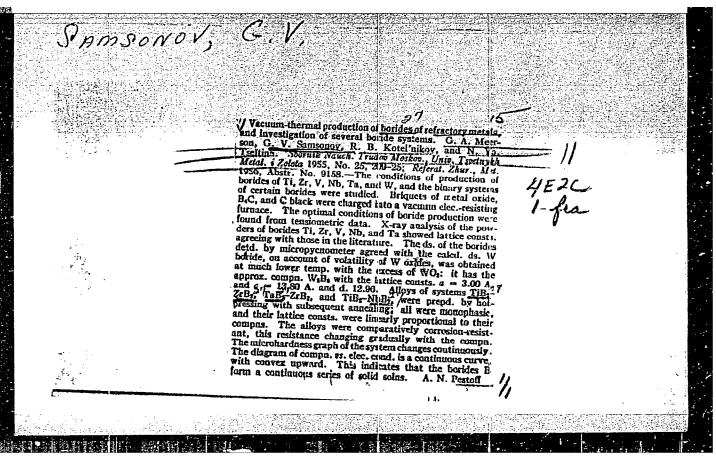
Abstract: AlB<sub>12</sub> crystals were obtained by aluminum-thermal reduction of boric anhydride in crucibles. The contents of boron in the beads obtained during the melting amounted to 82.5 - 82.8%. Almost all the  $AlB_{12}$  crystals were double growths. X-ray structural investigation has shown that  $AlB_{12}$  belongs to the tetragonal syngony and has the following periods: a 10.1  $\pm$  0.1; c 14.3  $\pm$  0.4 A and c/a  $\equiv$  1.41,  $\rho$  2.79  $\pm$ 0.02, number of atoms per elementary cell approximately 200. The electric resistivity of the pressed powder of AlB<sub>12</sub> is related to the density as follows: In ho = 7.588 \gamma - 15.03, where \rho is the resistivity (ohms/cm), and \gamma the density of the pressed briquette. The electric resistivity of the specimens of AlB<sub>12</sub> in compact state, prepared by hot pressing, amounts to approximately 103 ohms/cm, the thermal coefficient of electric resistivity is 0.4%/deg. The micro-hardness of AlB12 is close to the micro-hardness of B. 1 OF 1

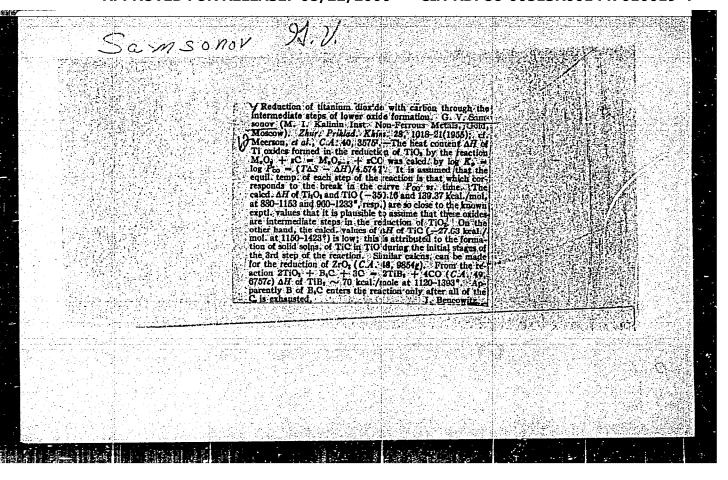
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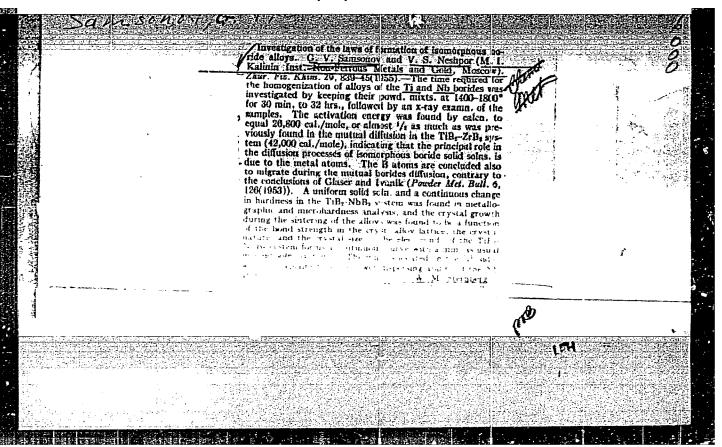
APPROVED FOR RELEASE: 08/22/2000











SAMSONOV, G.V

USSII/Chemistry - Metallurgy

Card 1/1

Pub. 22 - 30/51

Authors

Samsonov, G. V., and Neshpor, V. S.

Mtl.s

Mutual diffusion of titanium and niobium borides

Periodical , Dok. AN SSSR 101/5, 899-900, Apr 11, 1955

ibstract.

Investigation was conducted to determine the diffusion process in a TiB2-NbB2 system. Results showed that the reaction of the titanium and nichium borides at high temperatures leads to the formation of a monophase solid solution of both components. MBB2 was found to be the solvent and this is explained by the greater bond energy existing between the metallic atoms and the metal atoms and the B in the lattice of TiB, then in the NoB, lattice. The Ti atom was considered to possess a greater electron d-level defect than the Nb atom. Six references: 4 USSR, 1 German and 1 USA (1949-1954). Graph,

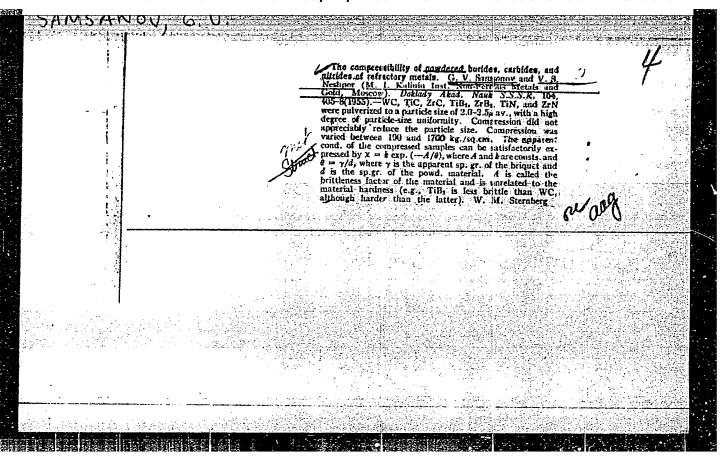
Institution :

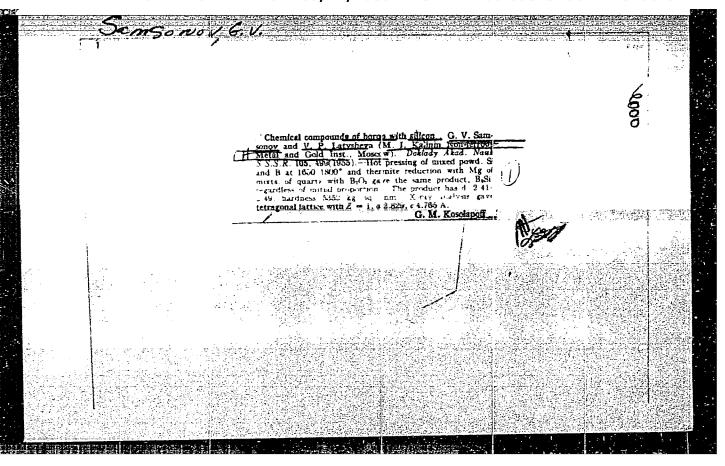
The M. I. Kalinin Inst. of Non-Ferrous Metals and Gold, Moscow

Presented by:

Academician A. N. Frunkin, October 22, 1954

CIA-RDP86-00513R001447010019-4" APPROVED FOR RELEASE: 08/22/2000





PAZUKHIN, Vasiliy Aleksandrovich; FISHER, Aleksandr Yakovlevich; KRESTOVNIKOV, A.N., professor, doktor, retsenzent; MEYERSON, G.A., professor, doktor, retsenzent; ZHUKOVSKIY, Ye.I., professor, doktor, retsenzent; MEN'SHI-KOV, M.I., kandidat tekhnicheskikh nauk, retsenzent; SAMSONOV, G.V., kandidat tekhnicheskikh nauk, retsenzent; MESHCHERYAKOV, S.I., kandidat tekhnicheskikh nauk, retsenzent; SAMSONOV, G.V., redaktor; ARKHANGEL'-SKAYA, M.S., redaktor izdatel'stva; EMELOV, A.P., tekhnicheskiy redaktor

[Vacuum in metallurgy] Vakuum v metallurgii. Moskva, Gos. nauchnotekhn. i2d-vo lit-ry po chernoi i tsvetnoi metallurgii,1956. 520 p. (Vacuum) (Metallurgy) (MLRA 9:12)

SAMSONOV, G. V.

Samsonov, G. V.

"Some physicochemical properties of compounds of the transition metals with boron, carbon, nitrogen and silicon." Min Higher Education USSR. Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin. Chair of Metallurgy of Rare Metals. Moscow, 1956. (Dissertation for the Degree of Doctor in Technical Sciences).

So: Knizhnaya letopis' NO. 25, 1956. Moscow

SAMISONOV Category : USSR/Sclid State Physics - Systems

E-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1158

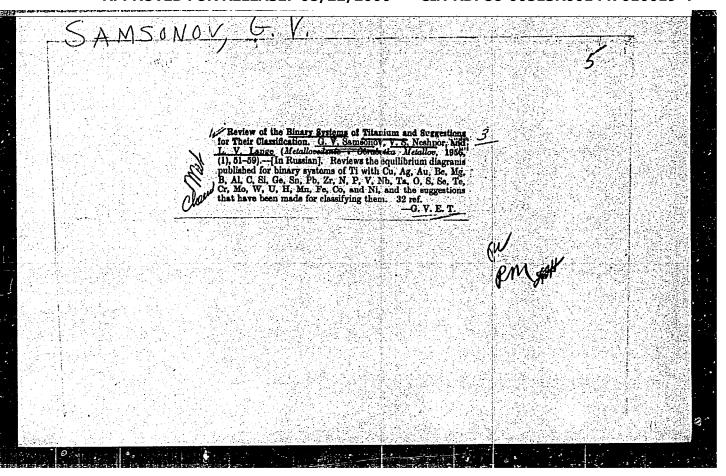
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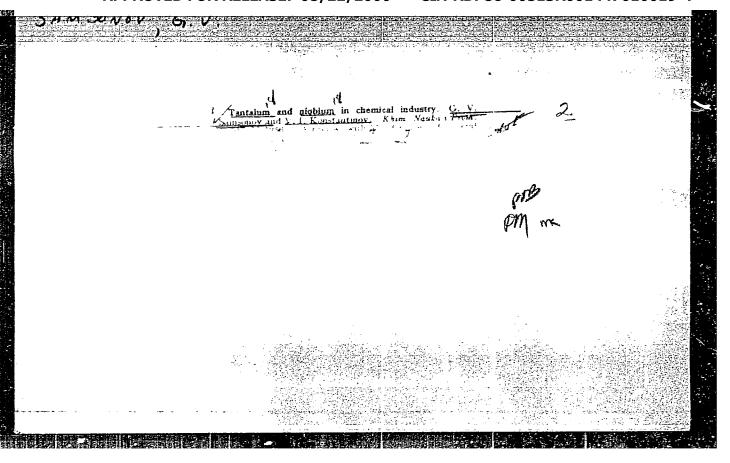
Author : Samsonov, G.V., Neshpor, V.S., Lange, L.V. Inst : Moscow Institute for Nonferrous Metals and Gold Title : Laws of Formation of Binary Alloys of Titanium

Orig Pub: Metallovedeniye i obrabotka metallov, 1956, No 1, 30-39

Abstract : When Ti interacts with metals that have a similar electron shell structure and a small difference in atomic diameters (not more than 18%), the additive (2r) may have an unlimited solubility in the or and f modification of Ti, or else continuous series of solid solutions are formed with titanium with a limited solubility in Ti (Mo, V, Nb, Ta). Elements having a different electronshell character and a different atomic diameter interact with titanium to form solid solutions with a limited solubility in the/3 and of titarium and with diagrams of state with eutectic or eutectold transformations (Ma, Fe, Cr, Si, Ni, Cu) or with peritectic or peritected transformations (C, N, Al). When Ti is smelted with elements of the transition groups, one observes an expansion in the region of the solid solutions with O-Ti.

Card : 1/1





C.

SAMSONOV, G.V.

USSR/Inorganic Chemistry - Complex Compounds.

: Ref Zhur - Khimiya, No 9, 1957, 30277 Abs Jour

: Samsonov, G.V., Zorina, O.N. Author

Inst

: Preparation and Some Properties of Thorium Hexaboride Title

: Zh. neorgan. khimii, 1956, 1, No 10, 2260-2263 Orig Pub

: Borides of Th were obtained by the method of vacuumthermal reduction of Th oxide with carbon of boron car-Abst

bide and carbon black, according to the reaction  $2\text{Th}O_2$ -+  $3\text{B}_4\text{C} + \text{C} \rightarrow 2\text{Th}B_6(1) + 4\text{CO}$ . At  $1300-1400^\circ$  the process takes place very slowly while at 1800° it comes to completion within 35-45 minutes. If the reaction is conducted in such a manner as to obtain ThB4, that is according to the scheme ThO2 + BLC + C > ThB4 + 200, the-

re is formed at 1250-13000 a product of composition ThxByCz (II). Density of II is 7.552. II has a teragonal

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#### "APPROVED FOR RELEASE: 08/22/2000

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USSR/Inorganic Chemistry - Complex Compounds.

Abs Jour : Ref Zhur - Khimiya, No 9, 1957, 30277

lattice, a 5.80, c 3.80 A. Powdered II sinters at 2230° to a compact state; melting point of II is about 2400° while the melting point of ThB<sub>6</sub> is about 2150°. Microhardness of I is 1740 + 123 kg/m², electric resistance 37 · 10<sup>-6</sup> ohm cm, coefficient of thermal e.m.f., when coupled with Cu, is 2.5 mv/degree in the interval 20 - 60°, work function on thermoemission 2.86 eV, coefficient of radiation 0.69 - 0.70.

Card 2/2

SAMSONOV, G.V.

USSR/Crystals.

B-5

Abs Jour

: Referat Zhur - Khimiya, No 6, 1957, 18248

Author

: G.V. Samsonov, N.N. Zuravlev, I.G. Amnuel'.

Title

: Concerning the Question of Physico-Chemical Properties

of Boron-Carbon Alloys.

Orig Pub

: Fiz. metallov i metallovedeniya, 1956, 3, No 2, 309-313

Abstract

: An x-ray and microscopical study, as well as the measurement of the electrical specific resistance and of the density of B and C alloys within the limits of C content from 5 to 72.5% by weight were carried out. It was found that at ≥ 5% of C, an imperfect structure of the carbide B<sub>1.2</sub>C<sub>2</sub> developed, which structure was characterized by vacant places on the c axis in the B<sub>13</sub>C<sub>2</sub> lattice. The vacant places were occupied by C atoms at 14 to 16% of C making the line -C-B-C-, which transformed later into the line -C-C-C- of boron carbide B<sub>12</sub>C<sub>3</sub> (= B<sub>1</sub>C). Alloys with the imperfect B<sub>13</sub>C<sub>2</sub> lattice possess the electron

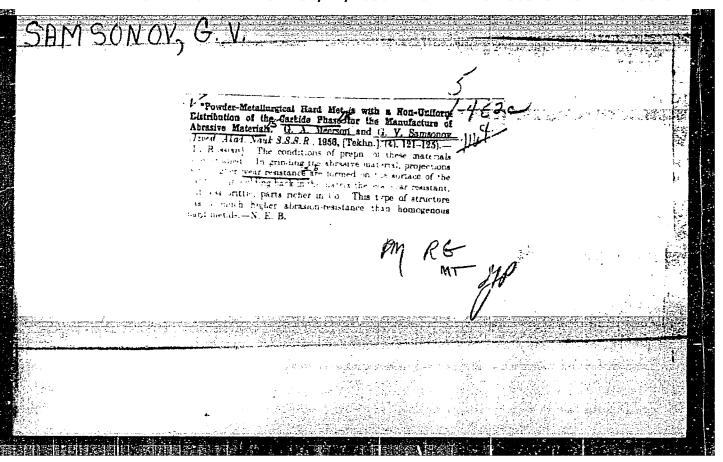
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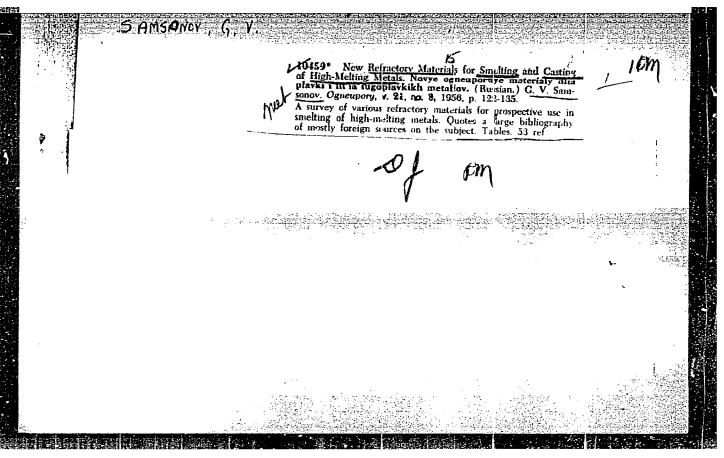
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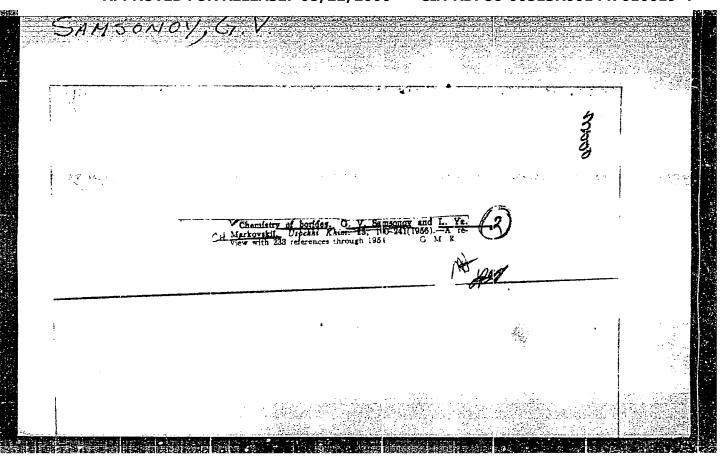
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Card 2/2

- 54 -







SAMSONOV, G. V., and CHISTYAKOV, Yu. D.

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"Metal-Reduction ('Metallothermic') Methods in Chemistry and Technology," by G. V. Samsonov and Yu. D. Chistyakov, Uspekhi Khimii, Vol 25, No 10, Oct 56, pp 1223-1248

Work on the reduction of metals and some nonmetals (31) with metals is reviewed. Reference is made to the use of metal hydrides as reducing agents in processes of this type. The physicochemical aspects of the processes involved are discussed in detail. The heats of formation of some oxides and halides (including CdCl<sub>2</sub>, ZrCl<sub>4</sub>, UCL<sub>4</sub>, RaCl<sub>2</sub>, LiCl, CeF<sub>3</sub>, LaF<sub>2</sub>, and LiF) are listed. The free energies of formation of halides including CeF<sub>3</sub>, ThF<sub>4</sub>, Zr F<sub>4</sub>, Ce Cl<sub>3</sub>, Th Cl<sub>4</sub>, and Zr Cl<sub>4</sub> are given. Practuding CeF<sub>3</sub>, ThF<sub>4</sub>, Zr F<sub>4</sub>, Ce Cl<sub>3</sub>, Th Cl<sub>4</sub>, and Zr Cl<sub>4</sub> are given. Practually applied reduction processes are listed under the subdivisions of processes conducted in vacuum, processes carried out under atmospheric pressure, and processes conducted in an atmosphere of inert gases or repressure, and processes conducted in an atmosphere of inert gases or reducing gases. The authors say that methods of this type are extensively used at present for the production of pure metals, primarily Ba, Cr, Mn, and some light and rare metals (e.g., Li, Be, Ti, Zr, and Va).

"While in the metal-reduction processes described above the oxide of the metal being reduced functions as the oxidant, oxidants in pyrotechnics are selected on the following basis: (a) the oxidant must contain the maximum quantity of oxygen and furnish it readily during the combustion of the mixture, and (b) the oxidant must represent a relatively stable, nonhygroscopic compound, at least in the temperature range minus  $60^{\circ}$  — plus  $60^{\circ}$ ."

The subject matter of the article is based to a considerable extent on data taken from USSR publications: out of 45 references in the bibliography, 26 are USSR.

[Comment: Some of the information given in this article has a bearing on the production of materials that are of importance in nuclear technology (e.g., U, Th, Li, Cd, Be, Zr). The discussion of the properties of metal fuels used in pyrotechnics is of importance from the standpoint of the potential use of such fuels as propellants in reaction motors.]

Sum 1274

The following processes are described, among others: production of lithium by the reduction of lithium oxide or of spodumene in vacuum with Al, Si, or Mg; production of Be by reduction of BeF<sub>2</sub> in vacuum with Ca or Mg; production of Ti, Zr, Ta, and other metals by the reduction of their halides with Mg or Na; and production of Zr, Ti, and Ta by the reduction of their complex fluorides. The use of oxidizing agents to raise the temperature during the process is mentioned and the properties of some oxidizing agents including Ba(NO<sub>3</sub>)<sub>2</sub>, Sr (NO<sub>3</sub>)<sub>2</sub>, KNO<sub>3</sub>, NaNo<sub>3</sub>, KClO<sub>3</sub>, Ba(ClO<sub>3</sub>)<sub>2</sub>, KClO<sub>4</sub>, BaO<sub>2</sub>, Na<sub>2</sub>O<sub>2</sub>, CaSO<sub>4</sub>, and Na<sub>2</sub>SO<sub>4</sub> are discussed from this standpoint. In conclusion the application of metal-reduction processes in pyrotechnics, specifically in military pyrotechnics, is discussed on the basis of information given in two USSR handbooks on the subject.

The section on pyrotechnics includes the following passage:

"Among metals which can be potentially applied as metal fuels one may mention Be, Al, B, Li, Mg, Ca, Si, Ti, V, Zr, and their alloys. The highest temperatures during combustion must be developed by Zr, Al, Ca, and Mg. At present, no metals except Mg, Al, and their alloys are applied for this purpose, although some metals which are extensively used in contemporary metallurgy would be suitable for this application either in the pure state or in the form of their alloys.

"To obtain the maximum effect from a metal entering into the composition of a pyrotechnic mixture, the oxidant must be appropriately selected.

B-8

SAMSONOV, G.V.

USSR/ Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium.

Physicochemical analysis. Phase transitions

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11177

Samsonov G.V. Author

: Institute of General and Inorganic Chemistry, Academy of Sciences USSR

Inst : Some Physicochemical Properties of Compounds of High-Melting Transition Title

Metals with Boron, Carbon and Nitrogen and Particularly of Their

Binary Alloys

Orig Pub : Izv. sektora fiz. -khim. analiza IONKh AN SSSR, 1956, 27, 97-125

Abstract : Review of work concerned with interaction of high-melting transition me-

tals of groups Iv, V and Vi of the Periodic System, with boron, carbon and nitrogen. An attempt is made to interprete some properties of the compounds thus formed in the light of modern concepts of the theory of

structure and chemical bonds. Biblography 47 references.

Card 1/1

. SAMSONOV, G. V.

Category USSR / Physical Chemistry - Crystals

B-5

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29770

Author : Samsonov G. V. Inst : not given

Title : Electric Conductivity of Some Compounds of Transition Metals with

Boron, Carbon and Nitrogen, and Their Alloys

Orig Pub: Zh. tekhn. fiziki, 1956, 26, No 4, 716-722

Abstract: Determination of electric resistance ( $\varsigma$ ) of carbides, borides and

nitrides of a number of transition metals (Ti, Zr, Nb, Ta, V, Hf, Mo, W, La, Ce) -- compounds of the type of implantation phases saturated with metalloid. The g of carbides is higher than g of the corresponding metals. This is an indication of the fact that formation of carbides results in an increase of the unfilled state of d-band and, correspondingly, of probability of scattering of carriers. In borides of Ti, V, Zr, Hf, Ce, La, g is lower than, and in borides of Cr, Nb, Mo, Ta, W, it is higher than the g of the corresponding metal. Borides of 2-nd group are, apparently, similar to carbides

Card : 1/2

-48-

MISONOV G,V.

USSR/Thermodynamics - Thermochemistry. Equilibria.

Physical-Chemical Analysis. Phase Transitions.

B-8

Abs Jour

: Referat Zhur - Khimiya, No 6, 1957, 18498

Author

Inst

: G.V. Samsonov, N.S. Rozinova. : Institute of Organic and Inorganic Chemistry of Academy

of Sciences of USSR.

Title

: Some Physical-Chemical Properties of Zirconium and Carbon

Alloys.

Orig Pub

: Izv. Sektora fiz.-khim. analiza IONKh AN SSSR, 1956, 27,

126-132

Abstract : It was established on the basis of roentgenographic and metallographic research and the study of the microhardness and electric conductivity of Zr and C alloys that the alloys containing 0.64 to 3.12% of C by weight were two-phase alloys. The basic (hexagonal) phase is a solid solution of C in Zr, and the second (cubic) phase is a Zr carbide. Alloys containing 3.50 to 11.62% of C by

Card 1/2

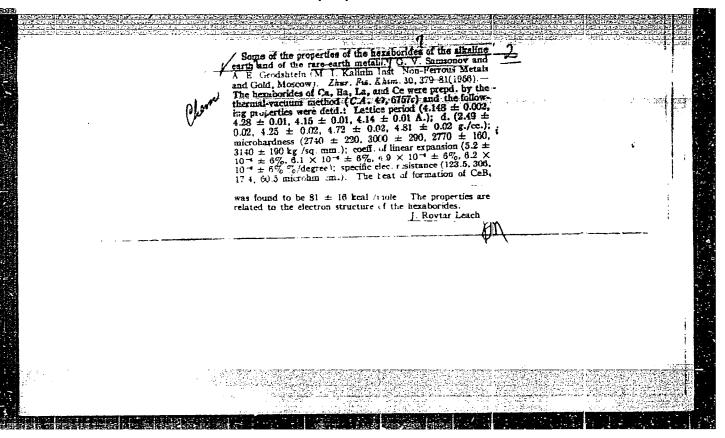
- 179 -

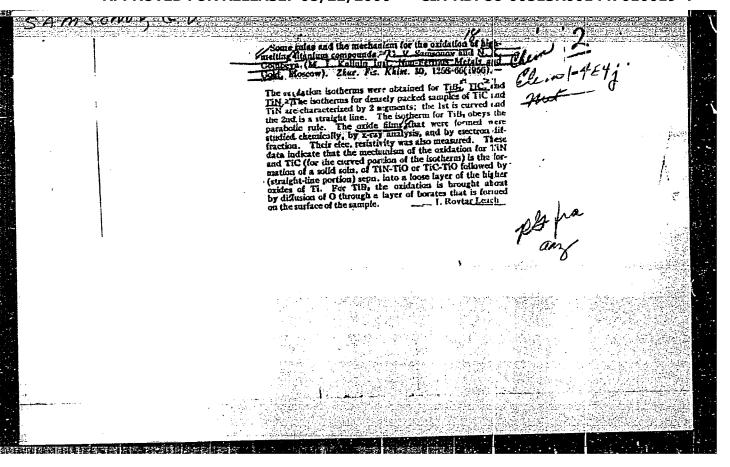
loys decreases from 3.16 A of pure Zr to 3.06 A at 0.00% of C by weight, after which it rises from 4.582 A at 3.50% of C by weight to 4.683 A at 11.62% of C by weight.

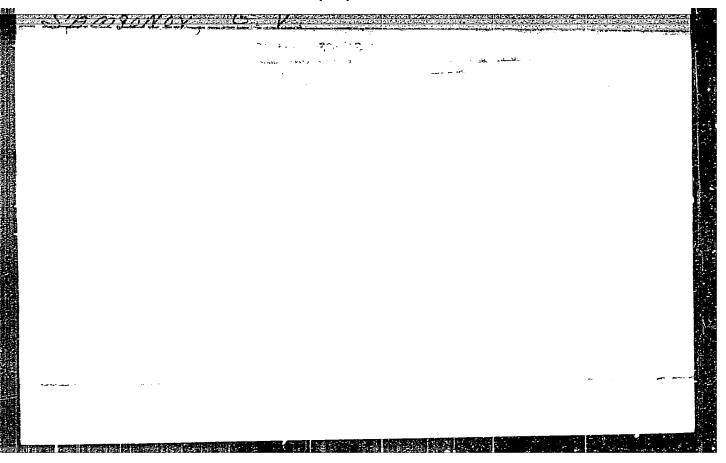
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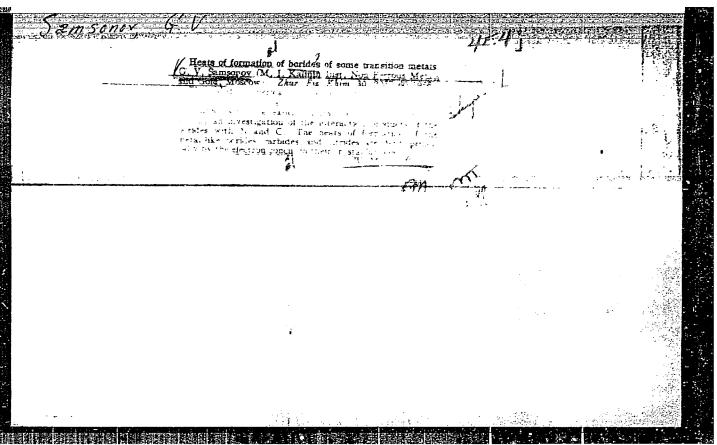
- 180 -

Card 2/2









B-5

SAMSONOV, G.V.

Category: USSR / Physical Chemistry - Crystals

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29711

Author: Samsonov G. V., Latysheva V. P.

Inst : Academy of Sciences USSR

Title : Diffusion of Boron, Carbon and Mitrogen Into Transition Metals of

Groups IV, V AND VI of the Periodic System

Orig Pub: Dokl. AN SSSR, 1956, 109, No 3, 582-585

Abstract: Reaction diffusion of B and C into Ti, Zr, Nb, Ta, Mo and W is uti-

lized to elucidate the effect of vacant d-electron sites of metals and of ionization potential of B and C on the diffusion constants D and Q. Reaction diffusion results in the formation of the compounds TiC, ZrC, Ta.C, Nb C, W C, Mo C, TiB, TaB, NbB, Mo B and W B. Values of Q on diffusion of B, C and N (from another paper) into transition metals of groups IV, V AND VI, reveal the following regularities: 1) in the same group of the periodic system Q increases with atomic number of the metal; for the given metal, Q increases in the series B, C, N. Low values of Q in the case of B are attributed to the low ioni-

Card : 1/2 -22-

#### "APPROVED FOR RELEASE: 08/22/2000

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B-5

Category: USSR / Physical Chemistry - Crystals

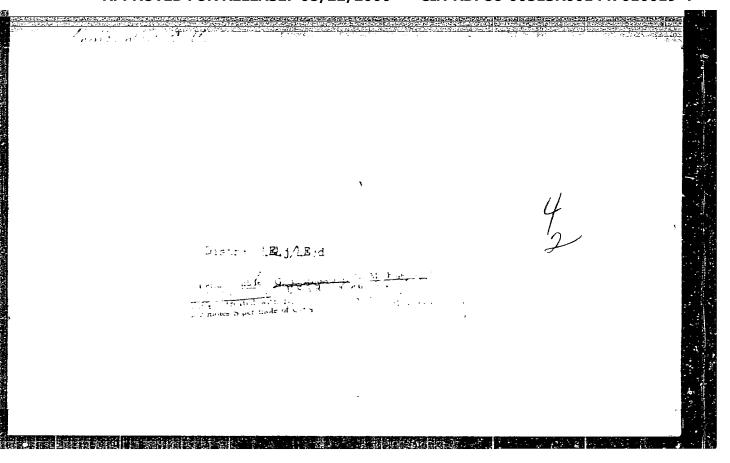
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Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29711

vation potential of B; 3) on transition from metals of groups IV and V to those of group VI, Q increases slightly in the case of B and sharply in the case of C. This is interpreted on the basis of the theory of Pauling (Pauling L., Phys. Rev., 1938, 54, 899). Differences theory of Q on diffusion of B into metals of groups IV, V AND VI, in values of Q on diffusion of B into metals of groups IV, V AND VI, level off in comparison with C; the authors attribute this to decreasing effect ofdeficiency of d-sublevel as a result of the formation of structure elements from atoms of B (chains, layers and framework, connected by covalent bonds).

Card : 2/2

-23-



SAMSONOV. Georgiy Valentinovich: PLOTKIN, Semen Yakovlevich; OL'KHOV, I.I.,

redaktor; GOLYATKIN, A.G., redaktor izdatel'stva; EVENSON, I.M.,

tekhnicheskiy redaktor

[Production of iron powder] Proizvodstvo zheleznogo poroshka.

Noskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1957. 348 p.

(Powder metallurgy)

(Probably Grigoriy Valentinovich, although Library of
mysss has confirmed the author's name as above)

#### "APPROVED FOR RELEASE: 08/22/2000 CIA-R

X

CIA-RDP86-00513R001447010019-4

SAMSONOV. Grigoriv Valentinovich; UMANSKIY, Yakov Semenovich; RASTORGUYEV,
L.N., redaktor; KAMAYEVA, O.M., redaktor izdatel stva; ORMONT, B.F.,
professor-doktor, retsenzent; TRET YAKOV, V.I., kandidat tekhniprofessor-doktor, retsenzent; MIKHAYLOVA, V.V., tekhnicheskiy redaktor.
cheskikh nauk, retsenzent; MIKHAYLOVA, V.V., tekhnicheskiy redaktor.

[Hard compounds of metals with high melting-point] Twerdye soedineniia tugoplavkikh metallov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 388 p.

(MIRA 10:6)

(Heat-resistant alloys)

#### "APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R001447010019-4

LAKERNIK, Mark Moiseyevich; SEVRYUKOV, Nikolay Nikolayevich; EELYAYEV, A.I.,

prof.. dokt.; retsenzent; VELLER, R.L., kand.tekhn.nauk; retsenzent;

vanyukov, A.V., retsenzent; KROL', L.Ya., retsenzent; SAMSONOT.G.V.,

retsenzent; LEONIDOV, N.K., inzh., retsenzent; ZHEMCHUZHIMA, Te.A.,

red.; EL'KINA, L.M., red.izdatel'stva; MIKHAYLOVA, V.V., tekhn.red.

[Metallurgy of nonferrous metals] Metallurgiia tsvetnykh metallov.

Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi

metallurgii, 1957. 535 p.

(MIRA 11:1)

(Monferrous metals-Metallurgy)

Electric conductivity of some compounds of the transition letais with boronz carbon and ningoren and their melts of Samsonov Sant Phys. Leth. Phys. Lett. 703-701 (1957) Roglish translation of 150 11-85 B. M. R.

LULIO!

SAMSONOV G

Institute of Metal Ceramic and Special Alloys, Academy of

Inst Sciences, Ukrainian, SSR.

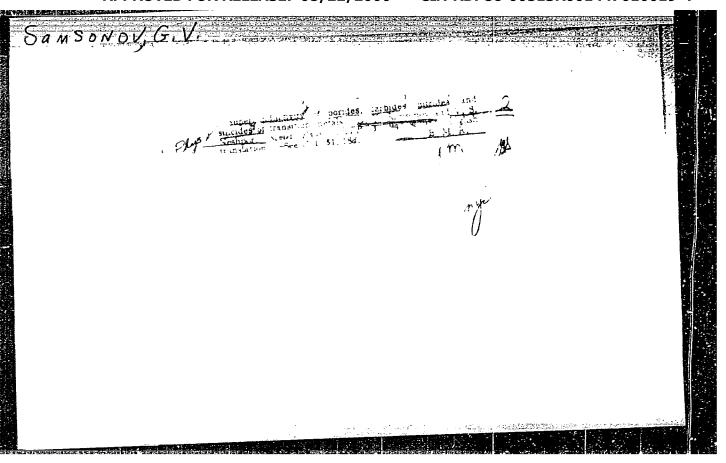
TitleAPPROVED FOR RELEASE DUSS/22/2000 CIA-RDP86-00513 CIA-RDP86-00513R001447010019-4"

Dopovidi AN URSR, 1957, No 3, 247-250 Orig Pub

: Experimental data are given on the measurement of the microhardness and the electric resistivity of alloys in Abstract the system Ta-C in the region where the carbides Ta2C and TaC are homogeneous. It is porposed to treat the results on the basis of the electron structure of the atoms Ta

and C.

Card 1/1



SAMSONOV, C.V.

122-3-6/30

Samsonov, G.V., Candidate of Technical Sciences, Dotsent. AUTHOR:

Components made of Boron Carbide (Izdeliya iz karbida bora) TITLE:

PERIODICAL: Vestnik Mashinostroyeniya, 1957, No.3, pp. 24 - 28 (USSR)

ABSTRACT: The properties of born carbide compared with other hard materials are stated in a numerical table. The preparation of components of boron carbide by hot sintering under pressure is discussed and described with the help of drawings and numerical data, taken mainly from foreign periodicals and patent literature. Some applications are discussed; original applications are mainly those for diamondless dressing of grinding wheels. Tests carried out at the First National Ball Bearing Factory (1GPZ imeni L.M. Kaganovicha) with the internal grinding of holes showed that a dressing pencil of boron carbide of 18 mm diameter and a height 23 mm stood up under shop conditions to 168 hours of service, and so ensured hole tolerances of between 8 and 10 microns. The ratio of volumes removed from the grinding wheel and the dressing pencil varies between 800 and 8 000 for boron carbide whilst for carborundum it varies between 200 and 60. There are 4 figures, including 1 photograph, 4 tables and cardl/1 32 references, of which 9 are Slavic.

Library of Congress. AVAILABLE:

#### CIA-RDP86-00513R001447010019-4 "APPROVED FOR RELEASE: 08/22/2000

SAMSONOV, G. V.

AUTHORS:

Neshpor, V.S. and Samsonov, G.V. (H.V.)

21-5-13/26

TITLE:

New Borides of Rare-Earth Elements (Novyye boridy redkozemel!-

nykh elementov)

PERIODICAL:

Dopovidi Akademii Nauk Ukrains'koi RSR, 1957, Nr 5, pp. 478-

479 (USSR)

ABSTRACT:

The authors obtained the borides of dysprosium, holmium and lutecium by means of the vacuum-thermal method. They were subjected to X-ray and chemical analyses. Roentgenograms of all these compounds are completely similar and indicate the presence in each of them of two phases: cubic and tetragonal so that the composition of these borides is as follows: DyB6, DyB4, HoB6, HoB4, LuB6 and LuB4. The constants of their lat-tices are cited in Table 1 of the article. The intensities of the lines of the two phases in the roentgenograms are approximately equal; most of the lines are ascribed to the phase of MeB4. The article contains 1 roentgenogram, 1 table and 6

references, 2 of which are Slavic.

Card 1/2

### "APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R001447010019-4

21-5-13/26

New Borides of Rare-Earth Elements

Institute of Metalloceramics and Special Alloys of the AN ASSOCIATION:

Ukrainian SSR (Instytut metalokeramiky i spetssplaviv AN URSR)

PRESENTED:

By V.N. Svechnikov (V.M. Svyechnikov), Member of the AN Ukrainian SSR

SUBMITTED:

4 March 1957

AVAILABLE:

Library of Congress

Card 2/2

CIA-RDP86-00513R001447010019-4" APPROVED FOR RELEASE: 08/22/2000

AMSONOV G.V. 109-5-14/22 SAMSONOV G.V., NESHPOR V.S., KUDINTSEVA G.A. On the Relationship Between Thermoemission Constants of Transitive luthor 🕽 Metals (and Their Compounds with Several Metalloids) and Electronic TITLE (O svyazi termoemissionnykh postoyannykh perekhodnykh metallov(i ikh soyedineniy s nekotorymi metalloidami)s elektronnoy strukturoy Raciotekhnika i blektronika, 1957, Vol 2, Nr 5, pp 631-636 (U.S.S.R.) An attempt is made here to determine the relation between the elec-PERIODICAL tronic work function in thermoemission and the electronic structure ABSTRACT of transitive metals ( and their compounds with boron , carbon and nitrogen). It is shown that the work function depends on the atomic structure of the metal and decreases with decreasing degree of screening of the electrons of incompletely occupied d-atom shells of transitive metals. The work function can be brought into connection with the quantity of dispersive power of the atoms of transitive metals which are characterized by the criterion 1/Nn. N - chief quantum figure; n - the number of electrons in the incompletely occupied d-shell, it decreases with increasing 1/Nn. In metalloid compounds of transitive metals with boron , c arbon and nitrogen the work function should increase with increasing 1/Nn for the corresponding transitive metals. This is confirmed in the case of borides, but in the case of carbides and nitrides it can not yet be considered to be an established fact. The ionizing potential of the metalloid atom Card 1/2

On the Relationship Between Thermoemission Constants of 109-5-14/22 Transitive Metals (and Their Compounds with Several Metalloics) and Electronic Structure.

exerts considerable influence on the amount of the work function of metalloid compounds. A reduction of the work function is to be expected in the MeB2-MeC-MeN series, where Me is a transitive metal of groups IVa, Va, or VIa. The work function is in most cases smaller in the case of metalloid compounds than in that of the corresponding metals.

( 1 table, 4 illustrations, 6 Slavic references).

ASSOCIATION Not Given.
PRESENTED BY
SUBMITTED 25.6.1956
AVAIDABLE Library of Congress.
Card 2/2

SAMSON OU, G.V

Neshpor, V.S. and Samsonov, G.V.

126

AUTHOR:

On the problem of brittleness of metalloids compounds. (K voprosu o khrupkosti metallopodobnykh soyedineniy.)

PERIODICAL: "Fizika Metallov i Metallovedenie" (Physics of Metals and Metallurgy), 1957, Vol.IV, No.1 (10), pp.181-183 (U.S.S.R.)

ABSTRACT:

The coefficients of linear expansion of a number of metalloids were determined and their modulus of elasticity was estimated on the basis of a formula proposed by Ya. I. Frenkel' (3). In a table, p.181, the coefficients of linear expansion, the elasticity moduli, the mean square displacements of the molecules in the crystals and the brittleness of these compounds are given, some of the data being based on information published in literature. The following compounds were investigated by the authors: Mo<sub>2</sub>C WC, TiC, ZrB<sub>2</sub>, TiB<sub>2</sub>, ZrC, TiN, CrB<sub>2</sub>. The values given in the table for W<sub>2</sub>C, NbC, TaC and VC are those given by Koster (Zs. f. Metallkunde, 1948, 39, 111).

1 table, 1 graph, 7 references, 3 of which are Russian.

Institute of Metal Ceramics of Special Alloys, Ac.Sc. Ukraine: Moscow Institute of non-ferrous metals and gold imeni M.I. Kalinin. Recd. Mar.22, 1956.

**经利用工程的工程的证明,这种证明的证明,但是是不是不是证明的证明的证明的证明。** 

AUTHORS: Samsonov, G. V. and Solonnikova, L. A. 126-5-3-30/ TITLE: Diffusion of Silicon in Transition Metals (Diffuziya 126-5-3-30/31

kremniya v perekhodnyye metally)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol 5, Nr 3,

pp 565-566 (USSR)

ABSTRACT: Transition metals form compounds of high electrical conductivity with silicon (Ref.1), which can become

superconducting (Ref.2), which have a metallic lustre, Crystallographically, silicides are substitutional phases (Ref.3), unlike carbides and nitrides, which are

interstitial, or borides, which show some signs of being insterstitial, as well as some layered features typical of silicides. The metals used were Ti, Nb, Ta, Cr, Mo, W, Fe, Co and Ni; the diffusion data were worked up to

give the activation energies of diffusion. The cylindrical specimens were saturated with silicon in an oven while

immersed in silicon powder containing activating additives. The thicknesses of the silicided layers were determined

from etched cross-cut sections. Wafers less thick than the silicide layer were examined with X-rays and by

Card 1/3 chemical analysis; in all cases the layers were found

.Diffusion of Silicon in Transition Metals

126-5-3-30/31

to consist of disilicides. The results were worked up in the normal way for reactive diffusion (Ref.4). The activation energies (in cal/mole) given in the Table were derived, and compared with those for B, C and N in the same metals (Refs. 4, 5, 7). The silicon was found to give the lowest activation energy, although, formally speaking, one would have expected it to give the largest, since silicon has the largest atomic radius (1.18 A), while B, C and N have 0.9, 0.77 and 0.71 A respectively. The figure shows that the activation energy is inversely proportional to the ionization The electronic properties, potential of the metalloid. rather than the radius, are therefore here decisive. Although silicon gives low activation energies, the silicides have comparatively low values of the physical parameters, relative to borides, carbides and nitrides. This occurs because the high-melting carbides and nitrides (Ref.8), and partially the borides, are interstitial in type, while the silicides are substitutional. In the first three the shear deformation in hardness Card 2/3 testing, and the general deformation in melting, are

126-5-3-30/31

Diffusion of Silicon in Transition Metals resisted by the cross-linking action of the metals, while the silicides, having graphite-like layers weakly bonded together (Ref. 10), deform comparatively readily. The silicides therefore often melt even below the melting point of

metals and silicon, and the hardnesses do not exceed 1000-1500 kg/mm<sup>2</sup>, while the borides, nitrides and carbides give values of 2000-3000 kg/mm<sup>2</sup> (Refs. 11, 12). In Fig.1 relations are graphed of the activation energies for metal-like phases to atomic radii and ionization potentials of the metalloids. E, kcal/mole vs. r, X, I, eV.

Note: This is a complete translation without including the information contained in the table, p.565 English.

There is I figure, I table and 12 references, Il Soviet, ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov AN Ukr.SSR (Institute of Cermets and Special Alloys, Ac.Sc., Ukr. SSR)

SUBMITTED: January 22, 1957

1. Silicon--Diffusion 2. Metal silicides--Preparation

3. Metal silicides -- Properties Card 3/3

### "APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R001447010019-4

Samsonovi

129-12-2/11

AUTHORS: Bal'shin, M. Yu. and Samsonov, G.V., Candidates of

Technical Sciences.

TITLE:

Forty years of powder metallurgy in the Soviet Union.

(40 let Sovetskoy poroshkovoy metallurgii).

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1957, No.12,

pp. 15-25 (U.S.S.R.)

ABSTRACT: The first part of the paper deals with prewar and pre-1917 developments, mentioning that in 1932 fifty tons of "pobedite", thirty tons of "vokar" and sixty-nine tons of "stalinite" were produced and during that year these cemented carbides were used in 1400 Soviet plants. An All Union Scientific Research Institute for Cemented Carbides (Vsesoyuzniy Nauchno-Issledovatel'skiy Institut Tverdykh Splavov) was organised, the work of which determined to a certain extent the development of the Soviet cemented carbide producing industry during the post war years.
This Institute contributed a great deal to the development of the process of manufacture of shaped cemented carbide components. It is claimed that the Soviet Union is in the forefront as regards production of cemented carbides and this resulted in considerable successes in the fields Card 1/5 of machining of metals, mining, oil and geological drilling.

Between 1949 and 1951 a highly efficient method of

. Forty years of powder metallurgy in the Soviet Union. 129-12-2/11

producing pure borides of high melting point elements was developed (Ref.8) and also methods of producing silicides and a number of diagrams of state of carbides, borides, silicides and nitrides were investigated (Refs. 9-11). Cemented carbides were used as substitutes for diamonds in trueing grinding wheels and for machining hard watch and instrument jewels of the type of rubies and leucosapphires. New thermo-emitters for electronic devices (lanthanum boride) were developed and also high resistance resistors. At the Institute of Metalloceramics of Special Alloys, Ac.Sc. Ukraine (Institut Metallokeramiki Spetssplavov AN Ukr.SSR) intensive investigations are proceeding relating to cermets which consist of composition of oxides with carbides and of metals with oxides; a considerable part of this work was carried out by Ya. S. Umanskiy, G. A. Meyerson, B. F. Ormont and V.V. Grigor'yev (Ref. 12). An important contribution to the theory of alloys of hard, high melting point compounds was made by I. I. Kornilov (Ref.13). The Soviet chemical industry developed methods of production of boron-silicate Card 2/5 powders. F. I. Shamra and V. N. Yeremenko investigated

129-12-2/11 Forty years of powder metallurgy in the Soviet Union. alloys. P. I. Rebinder, V. I. Likhtman and I.N.Smirnova, Institute of Physical Chemistry, Ac.Sc. (Institut Fizicheskoy Khimii AN SSSR) contributed a great deal to the study of the relations governing the structural transformations in iron-graphite materials (Ref.16); their results enable evolving a rational technology for producing materials with an iron structure. Bimetallic lead bronze liners on a steel strip base and also trimetallic liners (steel base, powdered copper-nickel layer, tin babbite) were developed by V. V. Saklinskiy, A. A. Kokorev, V. A. Khazov and G. S. Konstantinov. Of great importance are welding electrodes, the contings of which contain waste steel powders; their use simplifies welding and increases the productivity by over 30%. A. S. Zaymovskiy and others have developed sintered magnetic materials, particularly the alloy alsifer (7.5% Al, 10% Si, 82.5% Fe). The technology of producing permanent magnets and pressed magnets from alni and alnico alloys was developed by Zaymovskiy, A. B. Al'tman and others. Work on developing magnetically soft cermet materials was carried out by N. I. Frantsevich and his team in the Institute of Card 4/5

samsonov, E.V.

AUTHOR: Samsonov, G. V.

73-3-1/24

TITIE: Intermediate Stages in the Formation of Carbides of Titanium, Zirconium, Vanadium, Niobium and Tantalum. (Promezhutochnyye Stadii Reaktsiy Obrazovaniya Karbidov Titana, Tsirkoniya, Vanadiya, Niobiya i Tantala.)

PERIODICAL: Ukrainskiy Khimicheskiy Zhurnal, 1957, Vol.23, No.3, pp. 287-296 (USSR).

ABSTRACT: Tensiometric measurements were carried out on carbides of the above listed metals in vacuum according to the reaction:

Me $_{x}$ O $_{y}$  + zC = Me $_{x}$ C $_{z-y}$  + yCO. X-Ray and chemical methods of analysis of the intermediate and final products and the calculation of the approximate values of their heat of formation verified the formation of TiC and ZrC via the intermediate oxides Ti $_{2}$ O $_{3}$ , Ti $_{3}$ O $_{5}$ , TiO and Zr $_{2}$ O $_{3}$ , ZrO and also the formation of vanadium carbides (from the V $_{2}$ O $_{3}$  + 5C layer), of niobium and tantalum carbides (from the Nb $_{2}$ O $_{5}$  + 7C and Ta $_{2}$ O $_{5}$  + 7C layers) via the intermediate oxides VO, V $_{4}$ O and TaO $_{2}$ ,

Card 1/3

73-3-1/24
Intermediate Stages in the Formation of Carbides of Titanium,
Zirconium, Vanadium, Niobium and Tantalum.

Ta<sub>4</sub>0. The values of AH(= change in heat content, cal/mole) of Tii<sub>2</sub>0<sub>3</sub> and TiO obtained from tensiometric data are given in Table 1. The tension ric curve of the reaction tio<sub>2</sub> + 3C = TiC + 2CO (d gram, Fig. 1) shows not 3 but 4 pressure jumps. The first occurs at 1.100 - 1.150°C, the second at approximately his same temperature, the third between 1250 and 1300°C and the last at 1280 - 1320°C. X-ray analysis of samples, given in Table 2 confirm the data obtained by chemical analysis. Diagram, Fig. 2 shows the tensiometric curve of ZrO<sub>2</sub> + 3C = ZrC = 2CO, with 3 pressure jumps. The chemical composition of the lower Zr oxides is given in Table 3. and line diagrams obtained by X-ray arglysis shown in diagram, Fig. 3. It is shown that ZrO here a cubical grid with an interval of is shown that ZrO here a cubical grid with an interval of the conditions of formation of vanadium carbide were carried out together with Gr. V. Moskalik (diagram, Fig. 4). The heat of formation of vanadium carbides was calculated from the co-ordinates of oints on the tensiometric curve (immediately preceding the pressure jumps) and are listed (immediately preceding the pressure jumps) and are listed

Card 2/3

加强的复数 电间隔极 医脑脏器 地名西西西西西西西西西西西西西西西

73-3-1/24

Intermediate Stages in the Formation of Carbides of Titanium, Zirconium, Vanadium, Niobium and Tantalum.

in Table 5. Further the formation of Niobium carbide was investigated and the relevant data are given in graph 5 and Table 6. Conditions for the formation of carbides of niobium and tantalum in vacuum are nearest in those having the composition NbC and TaC. Approximate values for AH of the metal oxides are given. There are 6 diagrams, 8 tables and 24 references, 12 of which are Slavic.

SUBMITTED: November, 23, 1956.

ASSOCIATION: Institut Metallo-Ceramic and Special Alloys.
(Institut Metallokeramiki i Spetssplavov AN USSR)

AVAILABLE: Library of Congress.

Card 3/3

SAMSONOVIGY.

439

AUTHORS:

Samsonov, G. V., and Popova, N. M.

TITLE:

Preparation and Certain Properties of Thorium Sulfides (Prigotovleniye i nekotoryye osobennosti sul'fidov toriya)

PERIODICAL:

Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 3-10 (U.S.S.R.)

ABSTRACT:

Efforts were made to improve the method of preparing thorium sulfides by direct combination of the thorium with the sulfur. A thorium powder containing 99.8% of Th and thoroughly purified sublimed sulfur were used as basic material for the experiments. The first series of tests was conducted at temperatures ranging from 400 to 850° with intervals of 50 to 100° with a running period of about 30 min. Parts of the products obtained were chilled in the open air and parts in an H2S stream. During the chilling of reaction products in a hydrogen sulfide stream the sulfur content increased sharply and the total of Th + S reached 100%, especially in experiments at 600°. The composition of products obtained with consideration of the absence of free Th is Th2S3. ThS and Th2S3 were observed to be the most stable sulfide phases in the Th-S system. Results obtained by extending the reaction period from

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# Preparation and Certain Properties of Thorium Sulfides

30 to 240 min. are given in Fig. 2. Results obtained at 800° with a change in sulfur content in the initial batch and 30 min. reaction time are presented in Fig. 3. Certain physical properties of thorium sulfides were determined including their melting point which was studied by direct melting of samples.

The melting of the sulfides at 2400 - 2450° and 2300° took place without any noticeable decomposition. Special samples prepared by calcination of the powder through hot molding were used for studying the microstructure and microhardness of the thorium sulfides. The sulfides were seen to react with the graphite of the molding forms sulfides were seen to react with the graphite of the molding forms at temperatures much lower than those necessary for the conversion of the sample into solid state. The S<sub>3</sub> samples baked at 1960 - 2000 showed a diphase structure. The The S<sub>2</sub> compound was also found to showed a diphase structure. The The S<sub>3</sub> compound was also found to be a variable composition phase, extremely homogeneous and ranging from ThS<sub>1.22</sub> to ThS<sub>1.59</sub>. The relation between the properties of thorium sulfides and other analogous compounds of intermediate metals with metalloids was established. Attention is called to

Card 2/3

# Preparation and Certain Properties of Thorium Sulfides

considerable stresses originating during the calcinating by hot molding which are slowly eliminated during and following anneal-

439

ing of samples.

Three tables, four graphs and one illustration. There are 20 references, of which 6 are Slavic.

ASSOCIATION:

Moscow Institute of Non-Ferrous Metals and Gold (Moskovskiy

Institut Tsvetnykh Metallov i Zolota)

PRESENTED BY:

SUBMITTED:

February 16, 1956

AVAILABLE:

Card 3/3

SOV/137-58-11-23268

ranslation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 203 (USSR)

Samsonov, G. V. AUTHOR:

Activation Energy During the Diffusion of Boron, Carbon, Nitrogen, TITLE:

and Silicon Into Highmelting Transition Metals (Energii aktivatsii

pri diffuzii bora, ugleroda, azota i kremniya v tugoplavkiye

perekhodnyye metally)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, Nauchno-tekhn. o-vo tsvetn. metallurgii, 1957, Nr 30, pp 192-222

The process of diffusion of B in Ti, Nb, Ta, Cr, Mo, W, Fe, Co, ABSTRACT:

and grade-3 steel, of C in Ti, Zr, Nb, Ta, Cr, Mo, W, and Co, and of Si in ('and' in the original. Transl. Note) Ti was investigated. Saturation of specimens of the above metals with B and Si was achieved in a stream of purified H at various temperatures (from 1000 to 2000°C for 2 hours). It was established that the corresponding carbide, boride, and silicide phases are formed in the course of the diffusion. The cal-

culation of the coefficient of diffusion D was accomplished according to the following formula:  $D(C_1-C_2) = C_0K$  where  $C_0$  is the amount of B, Si, or C necessary for the transformation of 1 cm<sup>3</sup> of the metal

Card 1/2

SOV/137-58-11-23268

Activation Energy During the Diffusion of Boron, Carbon, (cont.)

into the boride, silicide, or carbide phase, (C<sub>1</sub>-C<sub>2</sub>) is the difference of the concentrations of the metalloid on the borders of the layers, and K is a quantity dependent on the radius of the specimen, the thickness of the diffusion layer, and the saturation time. It was found that the activation energy of the diffusion of the metalloid into the transition metals of a given group increases with increasing atomic number of the metal. The activation energy increases during the transition from the borides to the carbides and nitrides. These regularities are related to the magnitude of the ionization potential of the metalloid and the degree of incompleteness of the a relectron sublevels of the transition metals. The activation energies of the reactive diffusion were compared with the crystalline lattice energy of the corresponding carbide and boride phases determined through calculations. The activation energy decreases with the increase of the energy of the lattices which are formed upon the diffusion of the phase.

Card 2/2

SOV/137-58-10-20802

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 65 (USSR)

Sirota, N.N., Samsonov, G.V., Strel'nikova, N.S. AUTHORS:

Electrical Properties of Some Metalloid Compounds and Solid Solutions Thereof (Elektricheskiye svoystva nekotorykh metal-TITLE:

lopodobnykh soyedineniy i ikh tverdykh rastvorov)

Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, nauchnotekhn. o-vo tsvetn. metallurgii, 1957, Nr 30, pp 368-374 PERIODICAL:

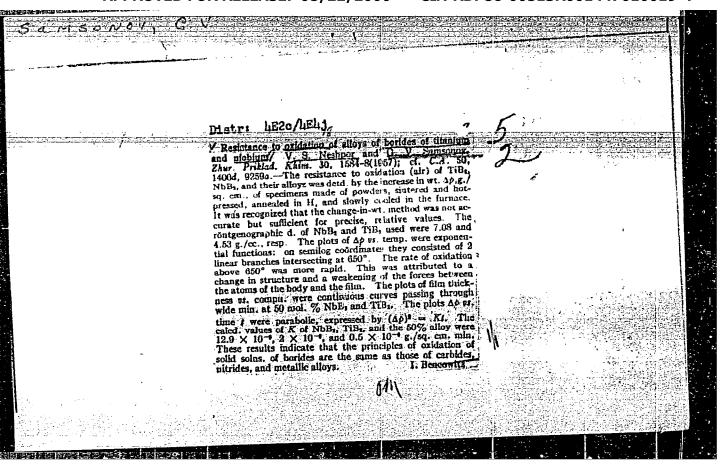
The results of measurement of the electrical resistivity and thermoelectromotive force of a number of carbides, sili-ABSTRACT: cides, borides, nitrides, and certain binary alloys thereof, all in a Cu-containing vapor, and of preliminary determination of the magnetic susceptibility of a number of two-component alloys of these compounds are presented. The specimens for investigation are made by hot extrusion. The electronic structure of the objects of investigation is used as the basis for discussion

of certain results of the work. 1. Intermetallic compounds—Electrical properties 2. Alloys—Electrical properties R.A.

Card 1/1

**工产业制度的政策等的政策的国际企业的企业的政策的政策的企业** 

#### "APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001447010019-4



#### "APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001447010019-4

SAMSONOV, G.V., kandidat tekhnicheskikh nauk, dotsent.

Boron carbide products. Vest.mash.37 no. 3:24-28 Nr 157.

(Boron carpide)

(Boron carpide)

#### "APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R001447010019-4

20-6-32/59 SAMSONOV, G.V. The Phases of the Tungsten-Boron System. AUTHOR (Fazy sistemy vol'fram - bor. - Russian) TITLE Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 6, pp 1299-1301 PERIODICAL (U.S.S.R.) On the occasion of the radiographical investigation of the tungsten-boron system 3 borides were found in the beginning: ABSTRACT the tetragonal W2B and WB as well as the hexagonal W2B5. Later the existence of a high-temperature modification of tungsten monoboride  $\beta$ -WB was determined. According to published data WoB ( 1 -Phase) has very close homogeneity limits, whereas ( $\delta$ -phase), has wider ones. The previously determined phase WB2 is probably identical with W2B5 if there is a deficiency of boron-atoms. For the purpose of a pricise determination of the phase range of the tungsten-boron diagram the author investigated alloys of this system by the methods of micro-hardness as well as by methods of radiography and metallography. The results obtained make it possible to suggest the following phase ranges of the tungsten-boron system: CARD 1/2

The Phases of the Tungsten-Boron System.

20-6-32/59

- 1)  $\alpha$ -range of a very restricted solid boron solution in  $\alpha$ -W.
- 2) two-phase range a plus &, with the & -range having a very restricted homogeneity range.
- 3) two-phase range 8+ δ (W<sub>2</sub>B + WB)
- 4) Homogeneity range of WB ( $\delta$ -phase)
- 5) two-phase range  $\delta + \xi$  (WB + W<sub>2</sub>B<sub>5</sub>)
- 6) homogeneity range of W2B5 which is probably very wide which does not coincide with KIESSLING'S data.
- (1 table, 5 Slavio references)

ASSOCIATION: Moscow Institute for Non-Ferrous Metals and Gold "M.I.KALININ"

PRESENTED BY: A.N. FRUMKIN, Member of the Academy.

SUBMITTED: 29

29.10. 1955

AVAILABLE:

Library of Congress.

CARD 2/2

## "APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R001447010019-4

SAMSONOV, G.V.

PERSONAL PROPERTY OF THE PROPE

20-6-23/42

AUTHORS:

Portnoy, K. I., and Samsonov, G. V.

TITLE:

Properties of Threefold Alloys TiB<sub>2</sub> - CrB<sub>2</sub> - ZrB<sub>2</sub> (Svoystva troynykh splavov diboridov titana, khroma i tsirkoniya)

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 116, Nr 6, pp. 976 - 978 (USSR)

ABSTRACT:

For the modern technical engineering of high mechanical stress at high temperatures borides of viscous rare metals are of interest, because they show a strong hardness and resistance to abrasion as well as stability toward acids. They shall be studied from systems in which extreme values of these properties are to be expected. In literature data on the systems mentioned in the title are almost entirely missed. Therefore the work under consideration has been attempted on diboride alloys lying at a " beam cross section" ("luchevoy razrez") TiB2-CrB2(50: 50 mol.%) ZrB2. Since it was known that borides of Ti and Cr, as well as of Ti and Zr form uninterrupted series of solid solutions, meanwhile borides of Cr and Zr are into one another soluble in a limited sense, it was interesting to follow, how the solubility of CrB2 (?) in a solid solution TiB2-CrB2, compared to its limited solubility in CrB2(?) and its uninterrupted solubility in TiB2, and in reverse, vary itself.

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20-6-23/42

Properties of Threefold Alloys TiB, - CrB, - ZrB,

...Conclusions: It has been stated that the solubility of ZrB2 in (Ti, Cr)B2 amounts to about 40 mol.%, whilst that one of (Ti, Cr)B2 in ZrB2 is below 10 mol%. The range of solubility of ZrB2 in CrB2 raises at the decomposition of ZrB2 in a twofold boride (Ti, Cr)B2. Zirconiumboride forms together with a component of the latter (TiB2) an uninterrupted series of solid solutions. In the range of the monophase of the solid solutions of ZrB2 in (Ti, Cr)B2 in a sample quenched of from 1900, there is maximum of micro-hardness: 3900 kG/mm² (at 20 mol.% ZrB2) and a maximum of electric resistance (216 \( \alpha \) \( \frac{1}{2} \) /cm at 10 mol.% ZrB2). There are 3 figures, and 6 references, 5 of which are Slavic.

ASSOCIATION: All-Union Scientific Research Institute for Aircraft Materials (Vsesoyuznyy nauchno-issledovatel'skiy institut aviatsionnykh meterialov)

PRESENTED: June 18, 1957, by A. A. Bochvar, Academician

SUBMITTED: June 7, 1957

AVAILABLE: Library of Congress

Card 2/2

GAMSONOV, G.V.

18(0,7)

PHASE I BOOK EXPLOITATION

SOV/2170

- Akademiya nauk Ukrainskoy SSR. Institut metallokermiki i spetsial'-nykh splavov
- Voprosy poroshkovoy metallurgii i prochnosti materialov, vyp. 5 (Problems in Powder Metallurgy and Strength of Materials, Nr 5) Kiyev, Izd-vo AN USSR, 1958. 172p. 2,000 copies printed.
- Ed. of Publishing House: Ya. A. Samokhvalov; Tech. Ed.: V.Ye. Sklyarova; Editorial Board: I.N. Frantsevich (Resp. Ed.), I.M. Fedorchenko, G.S. Pisarenko, G.V.Samsonov, and V.V. Grigor'yeva.
- PURPOSE: This collection of articles is intended for a wide circle of scientists and engineers in the research and production of powder metallurgy. It may also be useful to advanced students of metallurgical institutes.
- COVERAGE: This collection of articles describes the results of investigations made at the Institut metallo keramiki spetsial nykh splavov, AN USSR (Institute of Powder Metallurgy and Special Alloys, Academy of Sciences, Ukrainian SSR). The physical and chem-

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Problems in Powder Metallurgy (Cont.)

SOV/2170

ical properties of materials used in powder metallurgy are discussed. Materials described as new, production processes, and methods and results of mechanical testing are described. No personalities are mentioned. References follow each article.

### TABLE OF CONTENTS:

Samsonov, G.V., and V.S.Neshpor. Some Physical Characteristics of Metal-like Compounds.

The authors describe results of investigations of microhardness, coefficient of thermal expansion, calculation of the inter-atomic bond between the metal and the metalloid, and factors affecting this bond. They conclude that the hardness of the metal-like compounds is determined chiefly by the bonding forces between the atoms of the metal and the metalloid.

Yeremenko, V.N., G.V. Zudilova, and L.A. Gayevskaya, Chromium-Niobium Structural Diagram

The authors describe the results of an investigation of the chromium-niobium system by thermal, metallographic, and radio-graphic methods.

card 2/6

s/137/60/000/02/03/010

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No 2, p 92, # 2779

AUTHORS:

Meyerson, G.A., Samsonov, G.V.

TITLE:

On the Conditions of Obtaining Boron Carbide

PERIODICAL:

V sb.: Bor. Tr. Konferentsii po khimii bora i yego soyedineniy,

Moscow, Goskhimizdat, 1958, pp 52 - 57

The main condition for the preparation of high-quality  $B_{\parallel}C$  powder is the limitation of the temperature of the preparation process by the temperature of peritectic decomposition (2,200°C) entailing an increased amount of  $C_{\rm free}$  in the  $B_{\parallel}C$  powder and reducing its polishing capacity. The best industrial method of  $B_{\parallel}C$  production is the reduction of  $B_{\rm c}O_{\rm g}$  with carbon in electric resistance furnaces where the temperature of the process may be regulated. It is shown that fine-grained powder of the theoretical composition may be obtained by magnesium-thermal reduction of  $B_{\rm c}O_{\rm g}$  at temperatures of 1,000 - 1,400°C.

A.P.

Card 1/1

s/137/60/000/02/04/010

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No 2, p 92, # 2781

AUTHORS:

Meyerson, G.A., Samsonov, G.V., Kotel'nikov, R.B., Voynova, M.S.,

Yevteyeva, I.P., Krasnenkova, S.D.

Some Properties of Alloys of High-Melting Transition Metal TITLE:

Borides

V sb.: Bor. Tr. Konferentsii po khimii bora i yego soyedineniy, PERIODICAL:

Moscow, Goskhimizdat, 1958, pp 58 - 73

Information is given on the production technology and results of investigations into the phase composition and the structure of products of diffusional interaction between initial borides of the TiB2 CrB2, TiB2-W2B5 and ZrB2-CrB2 systems. The authors studied also microhardness of phases, resistance of alloys and the structure of cinder of various composition. heat-

A.P.

Card 1/1

sov/81-59-23-81116

Translation from: Referativnyy ahurnal. Khimiya, 1959, Nr 23, p 35 (USSR)

**AUTHOR:** 

Samsonov, G.V.

TITLE:

Н The Activation Energies of the Diffusion of Boron, Carbon, Nitrogen and

Silicon Into High-Melting Transition Metals

PERIODICAL: V sb.: Bor. Tr. Konferentsii po khimii bora i yego soyedineniy. Moscow, Goskhimizdat, 1958, pp 74 - 89

ABSTRACT:

Based on the roentgen- and chemical analyses as well as the measurements of microhardness and weight change of the samples, it has been established that the diffusion of B into Ti, Nb, Ta, Cr, Mo, W, Fe and Co, of carbon into Ti, Zr, Nb, Ta, Cr, Mo, W and Co and of Silicon into Ti is an active diffusion, i.e., it is accompanied by the formation of the pertaining boride, carbide and silicide phases. Based on the microscopic investigation of the thicknesses of the diffusion layers as well as on the data of the regions of homogeneity of the pertaining phases and the results of the chemical and roentgen-analyses, the activation energies have been calculated and equations of the temperature dependence of the coefficients of diffusion of B, C and Si into some of the metals indicated were derived. It has been

Card 1/2

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sov/81-59-23-81116

The Activation Energies of the Diffusion of Boron, Carbon, Nitrogen and Silicon Into High-Melting Transition Metals

shown that the values of the activation energies of the diffusion of B, C and Si into transition metals are connected with the value of ionization potential of the diffusing metalloid and the degree of incomplete filling of the d-electronic sublevels of the transition metals, and agree well with the physical constants of the transition metals and the pertaining boride, carbide and silicide phases.

Author's summary



Card 2/2

#### CIA-RDP86-00513R001447010019-4 "APPROVED FOR RELEASE: 08/22/2000

AUTHORS:

131-1-7/14

Samsonov, G. V., Neshpor, V. S.

TITLE:

Production, Properties and Technical Use of Molybdenum-Disilicide (Polucheniye, svoystva i tekhnicheskoye primeneniye disilitsida molibdena)

PERIODICAL:

Ogneupory, 1958, Nr 1, pp. 28 - 35 (USSR)

ABSTRACT:

This is one of the most important difficultly fusible compounds (Mo Si,) which in recent years are used at high temperatures. The extremely high resistance to the influence of atmospheric oxygen at a temperature of up to 1700°C and other agressive gases, as well as to acids and molten metals is to be considered its basic property. Its properties and behavior at different temperatures are described in detail; K. I. Portnyy also participated in these tests. The behavior of Mo Si, in the atmosphere of various gases and in the air is represented by the curves of figures 1 and 2 and then explained. Molybdenum-disilicide is resistant to the action of the following molten metals: sodium, lead, bismuth, tin, mercury and other metals which do not form disilicides. Table 1 shows the resistance of MoSi, to the oxidation in an oxygen flow at 1200°C after previous heating in metal melts. MoSi creeping and is not sufficiently resistant to heat shocks (see

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MERILLET TEST CHILDREN DESCRIPTION

131-1-7/14

Production, Properties and Technical Use of Molybdenum-Disilicide

table 2). The other mechanical and physical properties of MoSi<sub>2</sub> are enumerated in detail and explained and its use at high temperature is described in detail. Figure 3 shows a molybdenum heater with and without a MoSi<sub>2</sub>-covering. There are many possibilities of the preparation of MoSi<sub>2</sub>-powder, the simplest one consists of a direct combination of molybdenum with silicon: Mo +2Si = MoSi<sub>2</sub>. The tests of a direct synthesis were performed together with N. M. Popova. Up to a temperature of 1100°C the tests were performed in laboratory furnace TK 30/200 in an argon atmosphere (figure 4), at higher temperatures in a vacuum resistance furnace. In the Laboratory of the Institute for Powder Metallurgy and Special Alloys AN Ukrainian SSR MoSi<sub>2</sub> was produced at a temperature of 1000°C and one hour halt. I. D. Radomysel'skiy also participated in the experiments. Figure 5 records the porosity dependence of the test samples on the sintering temperature and figure 6 that on the time of sintering. Figure 7 shows products of molybdenum-disilicide of the firm Plansee in Austria. Conclusions: a) MoSi, is one of the compounds most resistant to scale and chemical influences, which property is connected with its high thermal conductivity, hardness and stability. It is used for the production of refractory products, heatproof alloys and covers for molybdenum products and for the soldering of ceramics with metals;

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APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001447010019-4"

131-1-7/14

Production, Properties and Technical Use of Molybdenum-Disilicide

b) the most suitable method of the production of MoSi2-powder consists in the heating of briquettes of a mixture of molybdenum- and silicon-powder in the course of 1 hour at a temperature of 1000°C and the manufacture of products by hot pressing of MoSi<sub>2</sub>-powder at a temperature of 1900°C. There are 9 figures, 2 tables, and 27 reatemperature of 1900°C. There are 9 figures, 2 tables, and 27 references, 9 of which are Slavic, 7 German and 10 English.

Institute for Powder Metallurgy and Special Alloys AN Ukrainian ASSOCIATION:

(Institut metallokeramiki i spetsial'nykh splavov AN USSR)

Library of Congress 2. Compounds-Production AVAILABLE:

1. Compounds-Properties 3. Compounds-Application

Card 3/3

CIA-RDP86-00513R001447010019-4" APPROVED FOR RELEASE: 08/22/2000

SAMSONOV, G. V.

129-1-8/14

AUTHOR: Samsonov, G.V., Candidate of Technical Sciences.

AUTHOR: Samsonov, G.V., Candidate of Total Samsonov

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.1, pp. 35 - 38 (USSR).

ABSTRACT: Chromium carbides, although having a relatively high chemical resistance, interact with titanium carbide forming ternary phases [Ref.2] and, for instance, for such systems as ternary phases [Ref.2] and, for instance, for such systems as tic-si a cutectic type of diagram has been observed which is obviously linked with the low loss of free energy during SiC obviously linked with the low loss of free energy during SiC of remation. The author considered it of interest to investigate the relation of other Ti compounds (borides, silicides, gate the relation of other Ti compounds (borides, silicides, nitrides) with metals of the ferrous group. In this paper, the interaction was investigated of titanium boride with Fe, Co interaction was investigated of titanium boride with Fe, Co and Ni. Since the work was not aimed at detailed investigation of these systems/atechnique was applied which is described in a paper by A.N. Zelikman and D.S. Bernshteyn [Ref.41, cribed in a paper by A.N. Zelikman and D.S. Bernshteyn [Ref.41, utilising titanium boride powder produced by the vacuum thermal method [Ref.5] and containing 68.90% Ti, 31.02% B and 0.02% Cfree and powders of Fe, Co and Ni which have been reduced by hydrogen

129-1-8/14

Character of the Interaction of Titanium Borides with Metals of the Ferrous Group.

titanium boride as compared to systems containing titanium carbide. This is attributed to the presence of strong, covalent bonds in titanium boride which levels out the diffcovarent bonds in treatment boride which revers out the difference in the behaviour of boride in its interaction with metals of the ferrous group. It is possible, in principle, to utilise titanium boride as the hard component of metalloceramic sintered carbides. There are 5 figures, 2 tables and 5 references, 3 of which are Slavic.

ASSOCIATION:

Institute of Metallo-Ceramics and Special Alloys, Ac.Sc. Ukrainian SSR (Institut Metallokeramiki i

Spetsplavov AN USSR)

AVAILABLE:

Library of Congress.

Card 3/3

### "APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001447010019-4

64-58-2-8/16 Samsonov, G. V., Candidate of Technical

Sciences, Plotkin, S. Ya., Candidate of AUTHORS:

Technical Sciences

Powder Metallurgical Materials for Chemical Industry TITLE:

(Metallokeramicheskiye materialy dlya khimicheskoy

promyshlennosti)

Khimicheskaya Promyshlennost', 1958, Nr 2, pp. 42-46 (USSR)

The present paper gives a survey on the kinds of production as well as on the various types of finished products of pow= PERIODICAL: ABSTRACT:

der metallurgy. It is mainly foreign processes and finished products which are mentioned. In the production of powder the authors point out the importance of structural charac= teristics as well as of the size of particles, with physi= co-chemical and mechanical methods of production being men= tioned. A table of the characteristic features of metal powders obtained by different methods is given. The pres= sing and sintering of metal powder or powder mixtures re=

spectively are carried out either simultaneously or by soaking the porous pressed article in liquid metal, or

also by means of a pressing into bands and other forms Card 1/4