

NEYMARK, M.Ye.; KOGAN, I.Ye.; BRAGILEVSKAYA, M.M.

Determination of the composition of coal-tar xylene. Koks  
i khim. no.2:50-53 '60. (MIRA 13:5)

1. Ukrainskiy uglekhimicheskiy institut.  
(Xylene)

NEYMARK, M.Ye.

Formation of potassium formate in the absorbing solution of vacuum potassium units after the removal of hydrogen sulfide from coke gas. Koks i khim. no.1:52-54 '62. (MIRA 15:2)

1. Ukrainskiy uglekhimicheskiy institut.  
(Potassium formate) (Coke-oven gas)

NEYMARK, M.Ye.; BEZRODNYI, V.I.

Syringe for injecting the sample into the chromatograph. Zav. lab. 30  
no.12:1519-1520 '64. (MIRA 18:1)

1. Ukrainskiy nauchno-issledovatel'skiy uglekhimicheskiy institut.

NEYMARK, M.Z.

Experimental investigation of personality trends. Vop. psikhol 9 no.1:  
3-12 Ja-F '63. (MIRA 16:4)

1. Institut psikhologii Akademii pedagogicheskikh nauk RSFSR, Moskva.  
(Child study) (Personality tests)

*Neymark N.Ya.*

**Use of Vacuum in Metallurgy (Cont.)**

533 Moscow, Izd-vo AN SSSR, 1958, 165p.

Trans. of a Conf. on above (Inst. Metallurgy, AN SSSR) (ed. SAMARIN, A. M.)

There are 2 drawings.

**Khitrik, S.I., Neymark, N.Ya., Nikolayev, V.I. and Gasik, M.I. Obtaining Dense Ingots of Carbon-free Ferrochrome and Metallic Manganese by the Vacuum-treatment Method**

112

Author's conclusions: 1. Blistering of the ingots is caused by a high gas content, particularly hydrogen and nitrogen. 2. Vacuum treatment is the simplest and most reliable method of producing dense ingots of these metals. 3. Introduction of vacuum treatment of ferroalloys at the Zaporozh'ye Ferroalloys Plant resulted in an increase of 5-20 percent in the satisfactory yield of metallic manganese and an increase of 3 percent in the case of carbon-free ferrochrome. 4. Vacuum treatment of alloys makes it possible to reduce the content of gases, phosphorus, and nonmetallic inclusions. 5. Vacuum treatment under a residual pressure of about 5 mm. mercury also permits a certain reduction of the carbon content, thus assuring a yield of Khr0000-type ferrochrome of unvarying quality. 6. It is recommended that vacuum treatment be tested in the production of other ferroalloys. (There are 3 Soviet references).

Card 11/16

Use of Vacuum in Metallurgy

533

Neymark, N.Ya. (Address)

129

Neymark described investigations conducted by an unidentified plant in cooperation with the Dnepropetrovsk Metallurgical Institute with the aim of producing blister-free ingots of ferrochrome. Success was achieved by blowing carbon dioxide gas through the melt and by vacuum-treating the melt.

III. EXTRACTION OF PURE METALS AND ALLOYS FROM ORES IN VACUUM

Vertman, A.A. and Semarin, A.M. Kinetics and Mechanism of the Thermal Reduction of Chromic Oxide by Carbon in Vacuum

132

The authors show that it is possible to obtain chromium, as well as other metals which form stable carbides, by carbon reduction, until recently believed impossible, by carrying out the process in a vacuum, which incidentally permits the reactions to take place at considerably reduced temperatures. There are 14 references of which 10 are Soviet, 2 English, and 2 German.

Card 13/16

NEYMARK, O.

1662. Treatment of Peptic Ulcer by Prolonged Narcosis  
(О методе лечения язвенной болезни длительным  
сном)

O. NEYMARK. Клиническая Медицина [Кли. Мед.,  
Моск.] 27, No. 9, 65-69, Sept., 1949.

The author discusses the results of treatment of 95 cases of peptic ulcer with narcosis. This treatment was applied in Leningrad in cases of medium-sized ulcer of recent origin and to patients with an unstable vegetative nervous system and irritation of the stomach and duodenal walls, but little anatomical change. In all these cases medical treatment had been tried without any satisfactory result. For narcosis phenobarbitone, 0.1 g., barbitalone soluble, 0.5 g., or "sodium amytal", 0.1 g., was given three times daily. In two-thirds of the cases sleep was maintained for 14 to 16 hours, and in the remainder for 17 to 20 hours daily. In order to avoid toxic effects the drugs were discontinued for 24 hours every fifth day. The author suggests that in some cases an increase in dosage would be beneficial as sleep should last for about 20 hours. Later the drugs were given recidally in the same dosage; narcosis set in earlier and lasted longer. In this series 90 cases were treated for 12 to 15 days and 5 for 20 to 23 days. In no case were there any ill effects. In 52 cases pain ceased and in 17 it diminished greatly. Of 15 patients suffering from dyspepsia symptoms ceased in 8. In 33 cases the ulcer radiological healing of ulcers; in 24 cases the ulcer became much smaller. In 31 cases the mucosal outline returned to normal. When 39 patients were questioned 6 to 9 months after treatment, only 7 stated that they were still free from pain. Possible effects of barbiturates on the brain stem are discussed. The author suggests that prolonged narcosis may have some value in the treatment of peptic ulcer, but that further observations are needed.

N. Charaladze

Abstracts of World Medicine Vol 7 1950

NEYMARK, O. M.

DECEASED

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ACENAPHTHYLENE

(1960)



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**NEYMARK, Stefania.**

Indications and contra-indications in radiotherapy of cancer of the cervix uteri. *Gin. polska* 27 no.1:53-63 1956.

1. Z Zakładu Radiologii A.M. w Łodzi. Kierownik: prof. dr W.Trzetrze-  
siński. Łódź, Piotrkowska 149.

(CERVIX, UTERINE, neoplasms,  
ther., x-ray, indic. & contra-indic. (Pol))

(RADIOTHERAPY, in various diseases,  
cancer of cervix, indic. & contra-indic. (Pol))

MICHALE, Wladyslaw; NEYMARK, Stefania

Production of pneumomediastinum by the transesophageal approach.  
Otolar. polska 15 no.4:431-437 '61.

1. Z Oddzialu Chirurgicznego Szpitala Min Sprawiedliwosci w  
Lodzi Ordynator: zast. prof. dr W.Michale.  
(PNEUMOMEDIASTINUM)

MICHALE, Wladslaw F.; NEYMARK, Stefania M.

Foreign bodies incarcerated in the duodenum. Polski tygod. lek. 16  
no.48:1850-1853 27 II '61.

1. Z Oddzialu Chirurgicznego Szpitala Ministerstwa Sprawiedlwosci  
w Lodzi; ordynator: zast. prof. dr med. W.Michalej.  
(DUODENUM for bodies)

MICHALE, Wladyslaw; NEYMARK, Stefania

Retroperitoneum in the examination of the pancreas.  
Pol. tyg. lek. 18 no.14:504-508 1 Ap '63.

1. Z I Kliniki Chirurgicznej AM w Lodzi; kierownik: prof. dr  
M. Stefancowski i z Zakladu Radiologii AM w Lodzi; kurator:  
doc. dr L. Mazurek.

(RETROPNEUMOPERITONEUM) (PANCREAS)

L 14544-63

BDS

ACCESSION NR: AP3001806

8/0030/63/000/006/0064/0068

AUTHORS: Mashintsev, Ye. V.; Meymark, V. N.; Yegorov, B. N.

TITLE: New devices for microphase analysis

SOURCE: AN SSSR. Vestnik, no. 6, 1963, 64-68

TOPIC TAGS: microphase analysis, dilatometer, thermoscale, thermographic oscillograph

ABSTRACT: The traditional techniques (thermography, thermogravimetry, extensometry, and microstructure investigation) have yielded good results in the study of atomic technology, rare elements and their compounds, new fuels, semiconductors, and other valuable or dangerous materials. However, Tsentralnoye konstruktorskoye byuro (Central Bureau of Structures) recently placed in operation new automatic devices for making much closer analyses of minute quantities of matter. They are: 1) the linear dilatometric unit LDU-1<sup>0</sup> which measures linear heat expansion<sup>0</sup> in solid states, volume change in polymorphic transformation of matter, the relaxation time and some physical and mechanical properties of polymers; 2) the volume-increase measuring unit OMD-1<sup>0</sup> that records the changes in highly plastic and liquid matter; 3) the microthermoscale<sup>0</sup> MTV<sup>0</sup> developed from electronic microscales<sup>0</sup> of the EM-1<sup>0</sup> type, for

Card 1/2

L 14544-63

ACCESSION NR: AP3001806

determining the kinetics of minute solid and liquid quantities of matter, and 4) <sup>2</sup>  
the thermographic registering device, NTR-62, a low-frequency light ray oscillograph.  
Orig. art. has: 1 graph and 2 photographs.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 15JUL63

ENCL: 00

SUB CODE: SD

NO REF SOV: 000

OTHER: 000

Card 2/2

OTCHENASHENKO, I.M.; NEYMARK, V.M.; YERMILOV, N.K.; YEGOROV, B.N.

Volume microdilatometer for investigating phase transitions.  
Zav. lab. 29 no.10:1260-1261 '63. (MIRA 16:12)

1. AN SSSR i Institut obshchey i neorganicheskoy khimii imeni  
N.S. Kurnakova.



U.S. PATENT OFFICE (U)/U.S. PATENT OFFICE (V)/U.S. PATENT OFFICE (K)/U.S. PATENT OFFICE (L)/U.S. PATENT OFFICE (S)  
ACC NO: APO029939 SOURCE CODE: JA/0143/66/000/015/0100/0100

INVENTORS: Koyark, V. N.; Ostentsov, I. K.; Yuraflov, N. K.; Yegorov, B. N.

CLASS: none

TITLE: A linear microdilatometer. Class u2, No. 18486 [announced by Central Construction Bureau of Unique Equipment AN SSSR (Tsentral'noye konstruktorskoye byuro unikal'nogo priborostroyeniya AN SSSR)]

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 100

TOPIC TAGS: thermal expansion, phase transition, measuring instrument

ABSTRACT: This Author Certificate presents a linear microdilatometer for measuring thermal expansion and for studying phase transitions of solid and high ductility materials. The microdilatometer contains a quartz tube with a quartz push-rod mounted upon it. One end of the quartz push-rod adjoins the surface of the specimen and the other end adjoins the deformation detector or mechanotron. The microdilatometer also has a quartz tube with a calibrated specimen for the differential-thermal analysis, a thermal unit with a programmed temperature regulation, a system for establishing a vacuum for the specimen, and a recording instrument. The design provides automatic and remote adjustment of the push-rod on the specimen and for setting of the measurement system to zero before the start of the measurement and

UDC: 531.71:062.6

Card 1/2

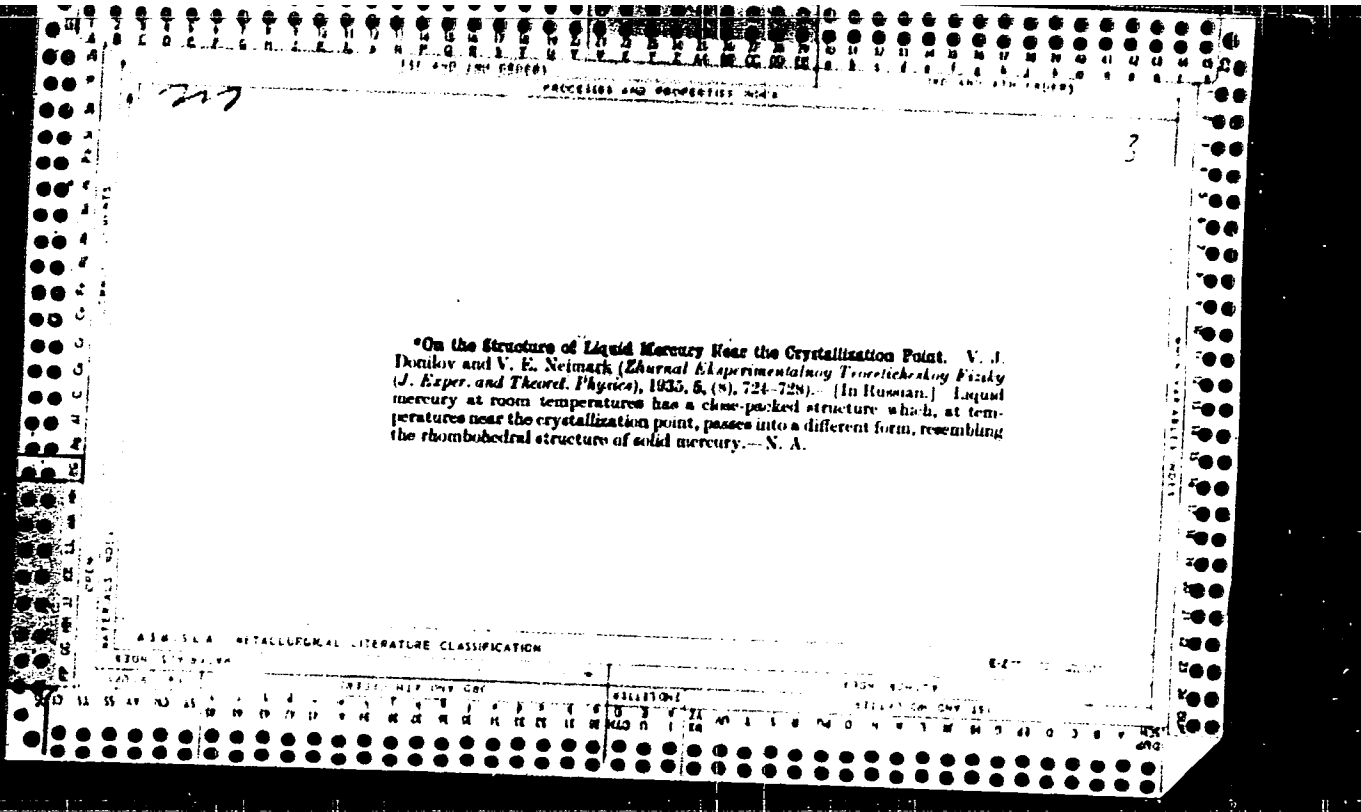
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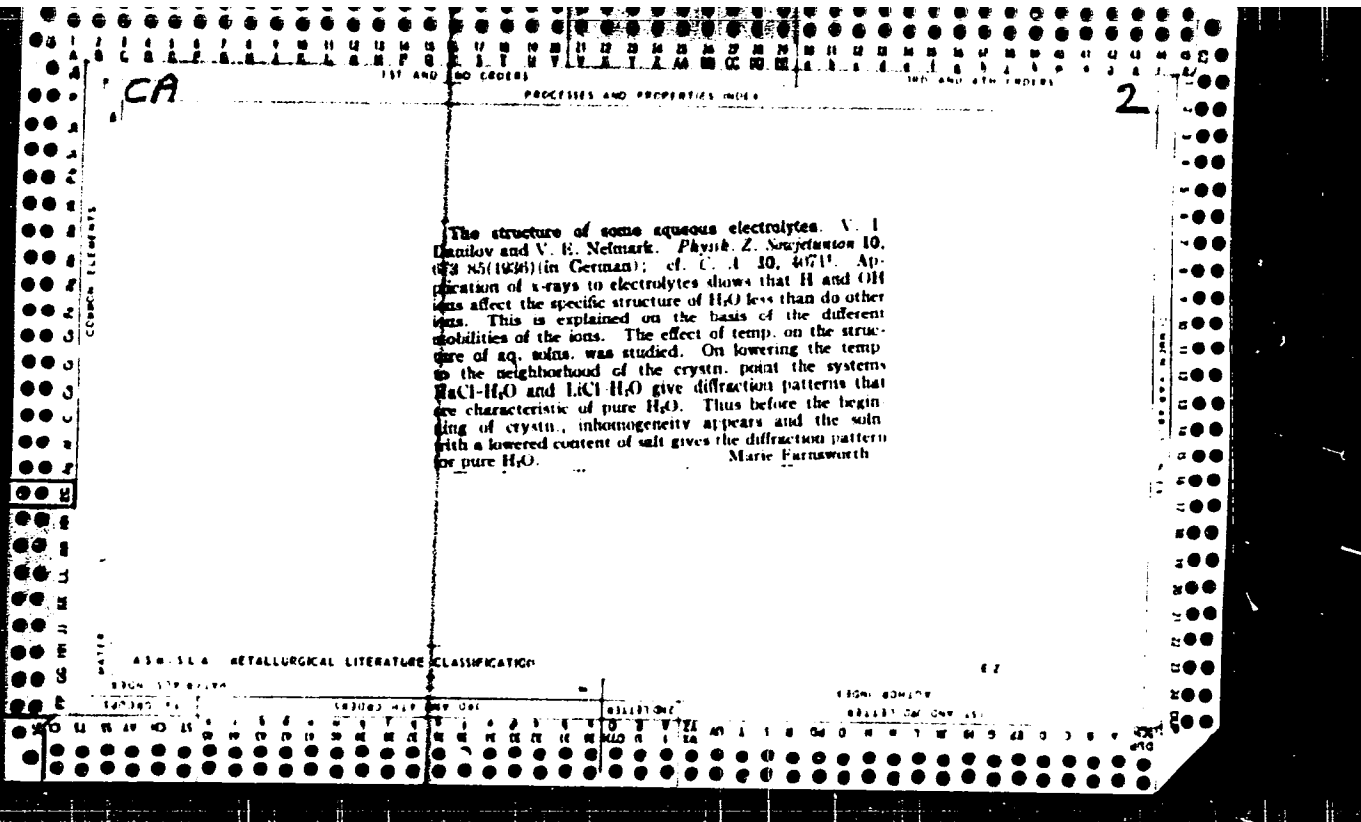
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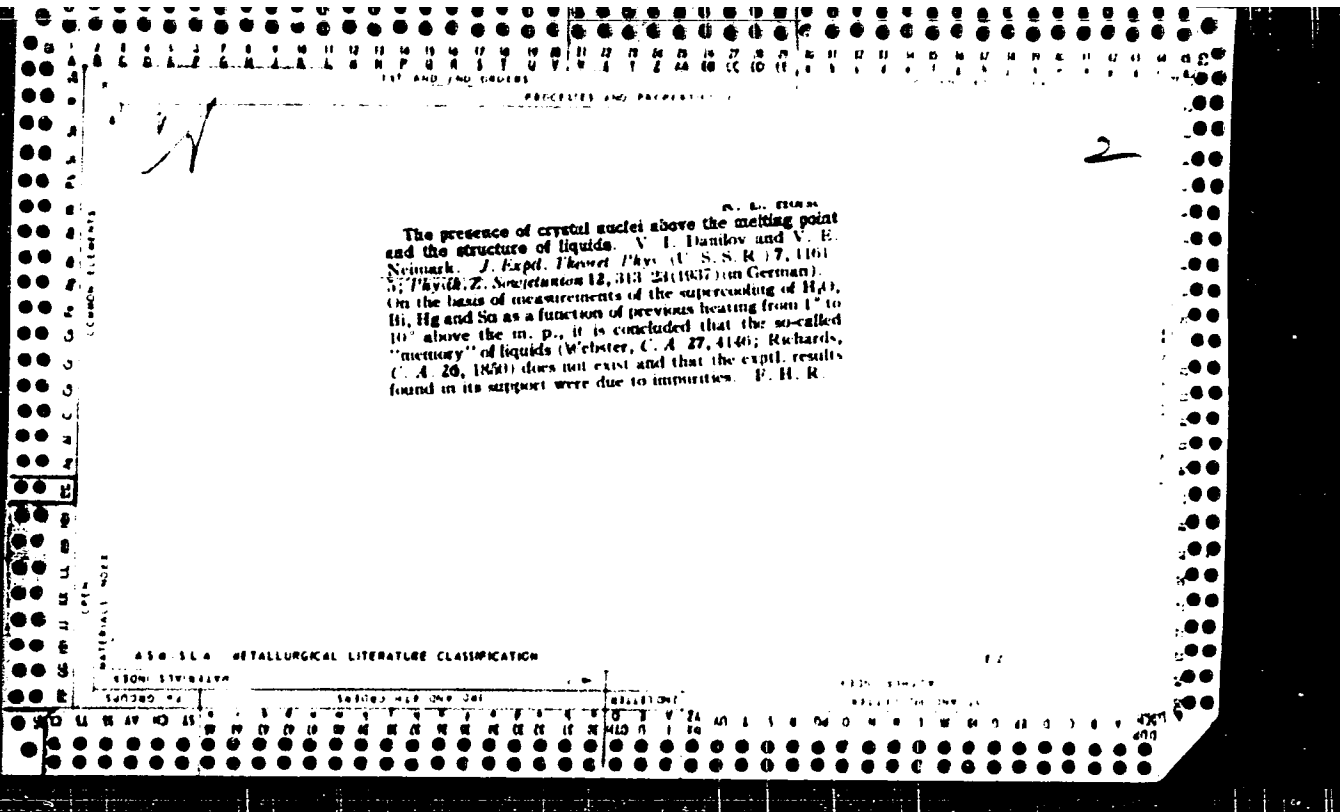
during the measurement process. A micrometer screw mechanism which adjusts the push-rod to the specimen is connected with a reversible electric motor. The motor is connected to the output of the mechanotron which is included as the zero-unit in the following system. To compensate for the pressure caused by the measurement force of the linear motion detector and the weight of the push rod, the push-rod is fastened to a link when a specimen is used for studying high ductility materials. This link is suspended on two flat springs with an eccentric regulator.

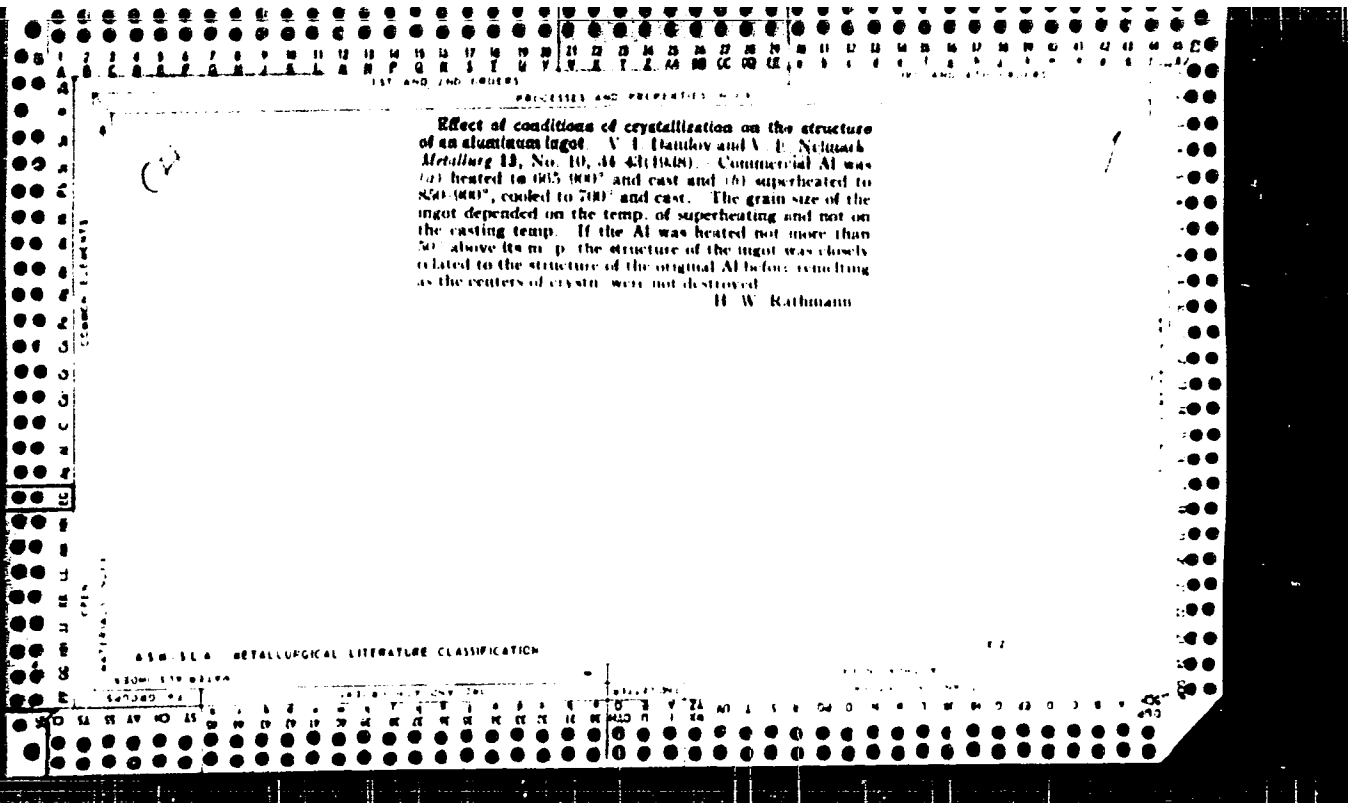
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PROCESSED AND REPRODUCED FROM THE ORIGINAL

Ca 2

Effect of insoluble admixtures on the crystallization of supercooled liquid metals. V. I. Danilov and V. E. Nelmark. *J. Exptl. Theoret. Phys. (U. S. S. R.)* 10, 942-8(1940).—Exptl. data on the effect of superheating on subsequent supercooling of pure bismuth and tin as well as with addn. of small amts. of PbO and WO<sub>3</sub> are shown in 13 graphs. Supercooling is greater, the greater the breaking down of the mutual coordination caused by melting. In such supercooled melts initial crystn. takes place chiefly on the admixts. The role of admixts. is less the less mutual coordination is broken down. F. H. R.

COMMON ELEMENTS  
OPEN MATERIAL INDEX  
ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION  
FROM SOURCE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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PROCESSES AND PROPERTIES INDEX

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\*Effect of Superheating the Melt on the Structure of Aluminium bronzes. V. I. Danilov and V. E. Neimark (*Metallurg*, 1940, 15, (10), 17-20; *Chem. Zentr.*, 1941, 11E, (11), 1765; *C. Abs.*, 1945, 20, 4311).—[In Russian.] The grain structure of aluminium bronzes containing 7-8% of aluminium is completely altered when these alloys are superheated about 200° C. above the liquidus. This effect is contrary to the behaviour of 5% aluminium bronzes, which show no change when subjected to similar treatment, i.e., a fine-grain structure is re-formed on cooling if the original material was fine grained.

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION



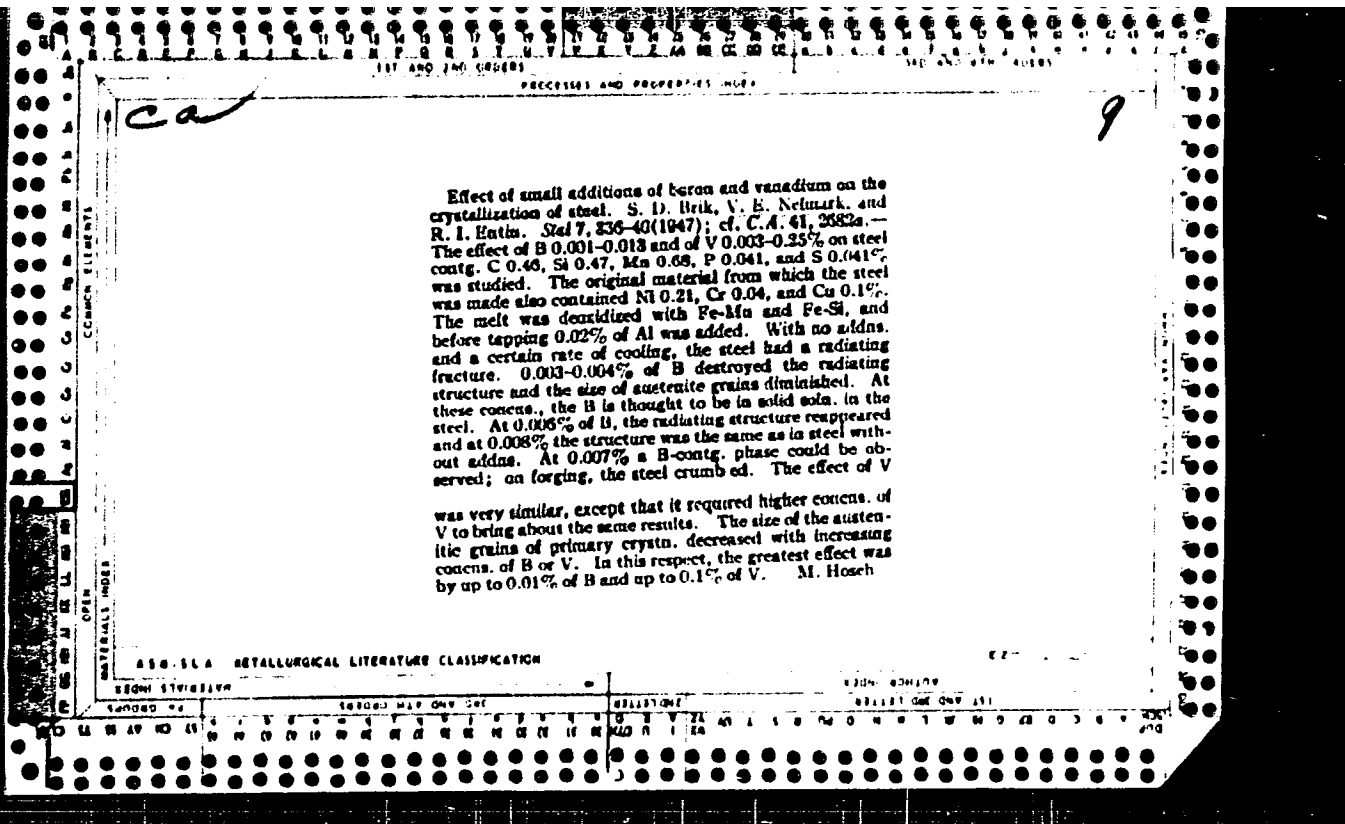
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9

*Effect of boron and vanadium on the kinetics of the isothermal transformation of austenite* B. D. Bok, V. B. Nefzakh, and R. I. Butin. *Met. Sci.* 6:100-101.

The purpose of this investigation was to det. the effect of B up to 0.003% and V up to 0.3% on the isothermal transformation of austenite and on the penetration (of hardening) effect in steel and to det. the optimum quantity of these elements to raise the stability of austenite and increase the penetration effect. This study was made on 4 steels, group I contg. around 1.07% C and small addns. of B, group II contg. around 0.48% C and small addns. of B, group III contg. 0.93-0.95% C and small addns. of V, and group IV contg. around 0.47% C and small addns. of V. In steels of group I 0.003-0.005% of B retarded the transformation of austenite at 400-550° and in steels of group II at 320-550°. Further increases in B accelerated austenite decompn.; at a B content of 0.006% austenite transformation was faster than without B. At higher temps. (620-50°), even the smallest addn. of B accelerated the rate of austenite transformation. At 400-50°, 0.05-0.07% of V arrests austenite decompn. in steels of group III. Raising the V content to 0.15% accelerates austenite decompn.; at 0.23% of V the acceleration is considerable. In steels of group IV there were 2 max. for austenite stability at 350-550°. These max. were obtained with 0.01-0.04 and 0.12-0.18% of V. With an addn. of 0.2% of V the austenite stability in this steel dropped. The effect of B and V on the penetration effect paralleled that of austenite stability. Since small addns. of B are effective at 350-400° and small addns. of V at 450-550°, it can be assumed that a simultaneous addn. of B and V will markedly increase the austenite stability and the penetration effect.

M. Hosh



USSR/Metals  
Steel  
Titanium

Mar 1948

"Effect of Titanium and Compatible Additions of Boron, Vanadium, and Titanium on the Crystallization of Steel," V. Ye. Neymark, Candidate Phys Math Sci; I. B. Piletskaya, Engr; R. I. Eitin, Candidate Tech Sci, Inst of Metallophys TSNIIUM, 7 pp

Vd. 9,  
"Stal." No 3 - 248-54

Small additions of titanium improve structure of primary crystallization of carbon steel and increase stability of austenite and annealed steels. Introducing combination of small amounts of vanadium,

43777

USSR/Metals (Contd) Mar 1948

boron, and titanium has even more noticeable effect. Data obtained does much toward facilitating proper choice of modifying additions.

43777

PA 43/43777

NEYMARK, V. YE.

USSR/Metals  
Steel  
Austenite

Dec 48

"The Austenite Grain of Primary Crystallization in Steel," V. Ye. Neymark, *TENLICHM, Inst of Metallophys*, 5 1/2 pp

"Zavod Lab" Vol XIV, No 12

Describes experiments to determine factors influencing the primary austenite grain in a steel containing 0.4-0.5% of carbon. Studies of samples taken from melts at 20, 100, and 1700 above the liquid line showed melting point has little effect

49/49T87

USSR/Metals (Contd)

Dec 48

on the primary austenite grain. Additions of 0.1% of the deoxidizing elements molybdenum, niobium, aluminum, vanadium, niobium, titanium, and boron decrease size of this grain to an increasing extent in the order named. Discusses effect of adding (1) 1% of copper, nickel or manganese, (2) 0.05% of aluminum or 0.1% of niobium, and (3) 1% of boron. Includes 13 photographs.

Translation B-80363, 16 Nov 54

49/49T87

49/49T87

USSR/Metals

NEYMARK, V.Ye., kand.fiz.-mat.nauk

Austenitic grain of initial crystallization in steel. Probl.  
metalloved.i fiz. met. no.[1]:92-105 '49. (MIRA 11:4)

1.Laboratoriya kristallizatsii Tsentral'nogo nauchno-issledovatel'skogo  
instituta chernoy metallurgii.  
(Steel--Metallography) (Austenite)

NEYMARK, V. Ye.

KOGAN, L.I.; ~~NEYMARK, V. Ye.~~, kand.fiz.-mat.nauk; PILETSKAYA, I.B.;  
ENTIN, R.I., kand.tekhn.nauk

Effect of certain small addition elements on steel crystallization and  
recrystallization processes. Probl.metalloved.i fiz. met. no.[1]:225-274  
'49. (MIRA 11:4)

1.Laboratoriya fazovykh prevrashcheniy i Laboratoriya kristallizatsii  
TSentral'nogo nauchno-issledovatel' skogo instituta chernoy metallurgii.  
(Steel alloys--Metallography)  
(Solidification)

NEYMARK, V.Ye., kand. fiz. mat. nauk; PILETSKAYA, I.B.

Sigma phase in cast 25-20 chromium-nickel steel. Probl. metalloved.  
1 fiz. mat. no. 2:48-63 '51. (MIRA 11:4)  
(Chromium-nickel steel--Metallography)

NEYMARK, V. Ye.

Solidification of Metals; (~~2005~~) Trans of 2nd Conf. on ~~1956~~  
Theory of Foundry Processes, 56; Moscow, Mashgiz, 1958. 512pp.

Fridlyander, I.N., Candidate of Technical Sciences. Investigation of the Effect of the Rate of Solidification on the Structure and Properties of Aluminum Alloys 275

Kamenetskaya, L.S., Candidate of Technical Sciences. The Effect of Addition Agents on the Crystallization of the Steel Ingot 299

Dukhin, A.I., Candidate of Technical Sciences; and V. Ye. Neymark, Candidate of Technical Sciences. On the Problem of Ingot Crystallization 310

Militsyn, K.N., Candidate of Technical Sciences, Docent. General Problems of the Crystallization and Solidification of Castings 314

Chertkov, G.V., Candidate of Technical Sciences. The Effect of the Rate of Cooling of Iron Castings on the Structure and Brittle-Strength Characteristics of Metal 327

Card 5/8



NE Y MARK, V. Ye.

137-1958-3-4815

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 52 (USSR)

AUTHORS: Neymark, V. Ye., and Dukhin, A. I.

TITLE: The Effect of Modifiers on the Crystallization Process of an Ingot (Vliyaniye modifikatorov na protsess kristallizatsii slitka)

PERIODICAL: V sb.: Rost Kristallov. Moscow, AN SSSR, 1957, pp 128-137

ABSTRACT: Various degrees of supercooling were employed during a study of the effect of small additions of B and Ti on the structure of ingots 120 x 120 mm in cross section, and ingots with a diameter of 3 mm, 50 mm, and 90 mm, consisting of st. 3, 1Kh18N9T, Kh18N9, Kh23N18, and Kh27 steels. The investigation established that an addition of 0.003 - 0.005 percent of B sharply refines the structure of the 120 x 120 mm ingot of carbon steel; increasing the amount of B up to 0.02 percent produces a coarser structure. The addition of 0.08 - 0.3 percent of Ti favors the growth of thin columnar crystals (CC). Both B and Ti retard the growth of the CC in the Kh27 steel (50 mm in diameter), but do not affect their growth in the Kh18N9 steel. Increasing the degree of supercooling of metal along the crystallization front increases the effect of the modifiers on the rate of formation of

Card 1/2

137-1958-3-4815

The Effect of Modifiers on the Crystallization Process of an Ingot

crystallization nuclei in austenite steel. The increase in the growth of CC at increased temperatures of a melt which was modified by soluble additives is explained by the presence of active, insoluble impurities in Fe-B and Fe-Ti, which are rendered inactive by the superheating of liquid steel and by a decrease in the supercooling of the crystallization front. The increase in the deactivation temperature, produced in the Kh27 steel by the addition of Ti, is explained by the presence of activated, insoluble additives in the Fe-Ti, which favor the formation of crystallization nuclei.

V. N.

Card 2/2

NEYMARK, V. Ye.

137-58-5-9191

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 62 (USSR)

AUTHOR: Neymark, V. Ye.

TITLE: The Effect of Additives on the Crystallization in Metals and Alloys (Vliyaniye primesey na kristallizatsiyu metallov i splavov)

PERIODICAL: V sb.: Fiz-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 690-704. Diskuss. pp 781-791

ABSTRACT: The following methods are employed for the refinement of ingot structure: a) increasing supercooling of the melt by means of intensified removal of heat; b) reducing the casting temperature; c) inoculation of the melt with small additions of various elements. In actual practice, the first two methods are difficult to realize. A more effective method of refining the structure of the ingot is the introduction of inoculants into the melt. The quantity of the inoculant which is introduced depends on several factors: activity of the additive, the degree of oxidation, saturation with gas, extent of contamination, and the physicochemical properties of the melt. Inoculants affect the crystallization process when in dissolved state as well as by forming insoluble

Card 1/2

137-58-5-9191

The Effect of Additives on the Crystallization in Metals and Alloys

admixtures. For example, when Fe-Ti is introduced into the steel, the Ti forms such compounds as oxides, nitrides, and carbides which then serve as crystallization nuclei; by dissolving in the melt, Ti also reduces the surface tension and thus increases the size of the crystallization nuclei. Small amounts of Al, Ti, V, Zr, B, Nb, Ca, Mg, Ce, and Ba were employed in various concentrations for experiments in the inoculation of ingots consisting of carbon and alloyed steel. At optimal concentrations of Al, Ti, V, B, and Ca inoculants the regions of large columnar crystals diminished or disappeared completely. The structure of ingots was not significantly affected by the addition of Zr, Nb, Mg, and Ce.

N. N.

1. Metals--Crystallization    2. Heat--Reduction

Card 2/2

SCV/24-58-4-37/59

**AUTHOR:** Guljajev, B.B.  
**TITLE:** Conference on Crystallization of Metals (Sovetschaniye po Kristallizatsii metallov)

**PERIODICAL:** Investiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1956, Nr 4, pp 153 - 155 (USSR)

**ABSTRACT:** This conference was held at the Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering of the Ac.Sc. USSR) on June 28-31, 1958. About 200 people participated and the participants included specialists in the fields of foundry metallurgy, crystallography, physics, welding, heat, physical chemistry, mathematical physics and other related subjects. In addition to Soviet participants, foreign visitors included Professor D. Cziki (East Germany) and N.I. Chvorinoy (Czechoslovakia). This conference on crystallization of metals was the fourth conference relating to the general problem of the theory of foundry processes.

**Crystallization of Steel and Alloys with Special Properties.** The following papers were read:  
V.I. Lepitskiy, N.I. Stupar, K.P. Rudakov.  
V.L. Ditskayko, A.I. Nakhov - "Certain Methods of Reducing Non-uniformities of Large Castings (up to 20 t) made of Rimmed Steel"; V.K. Koritskiy, A.B. Nisul'chin and V.V. Blizny - "Influence of Internal Crystallizers on the Structure and Properties of Steel Ingots"; M. Shchegolev (Czechoslovakia) - "On the Crystallization of Cast Ingot and Influence of Properties of Continuously Cast Steel"; L.I. Morozovskiy and O.B. Engel - "Influence of Movement of Metal in the Liquid Core on the Crystallization of Steel Ingots and Castings"; G. Kabanov, A.A. Kuznetsov and S. Guljajev - "Crystallization of Metals: The Properties of Steels at Elevated Temperatures"; V.K. Koritskiy - "Influence of Insulated Containers on the Properties of Steels at Elevated Temperatures"; G.P. Ivanov - "Speed of Solidification of Ingots"; G.P. Ivanov - "Thermal Stresses and Deformation in the Crystals of Crystallizing Ingot"; V.G. Gruzin and P.I. Yemelin - "Crystallization of Metals: Problems of Formation of the Primary Structure of Structural Steel and the Influence on it of the Temperature of Pouring";

The features of crystallization of castings made of alloys with special properties and of austenitic steels are dealt with in the following papers:  
V.G. Gruzin - "Influence of Recalculation on the Structure and Properties of Austenitic Steels"; P.P. Ekimshin - "Properties of High-Alloy Steels"; P.Ya. Rodina - "Occurrence of Non-uniformities in High-Temperature Alloys During Crystallization and Heat Treatment" and "Experimental Investigation of the Process of Crystallization of Cast Blades Made of Refractory Alloys"; A.M. Tikhov considered the process of recrystallization of steel.

Card6/10  
Card7/10

133-58-5-19/31

AUTHORS: Gurevich, Ya. B., Candidate of Technical Science and  
Neymark, V. Ye, Candidate Phys-Mathematical Science

TITLE: The Production of Seamless Tubes from Cast Bushings  
Obtained by the Vacuo-Crystallisation Method  
(Izgotovleniye besshovnykh trub iz litykh gil'z.  
poluchennykh metodom vakuum-kristallizatsii)

PERIODICAL: Stal', 1958, Nr 5, pp. 446-448 (USSR)

ABSTRACT: The possibility of producing thin walled seamless tubes from some difficult to deform steels by rolling bushings cast in vacuo was investigated. The method of casting bushings was that described in Ref.2. Experiments were carried out with steels Kh16N25M6, Kh16N19M3T and Kh25N20. Hot rolling of dressed (by machining) bushings was carried out on the mill 360 TsNIIChM. The temperature of metal was varied from 1200-300°C, the degree of reduction from 10 to 40% and the velocity of rolling from 0.7 to 3.5 m/sec. For the successful rolling of steel Kh25N20 the following conditions should be observed:  
a) cast bushings should not vary in transverse thickness (above 40%) and should not have coarse defects on the surface; b) cast metal should be submitted to diffusion

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133-52-1-19/31

The Production of Seamless Tubes from Cast Bushings Obtained by  
Vacuo-Crystallisation Method

annealing in order to destroy sigma-phase and dendritic  
dendritic liquation, usually strongly developed in  
austenitic steels; c) optimum hot rolling temperature  
1160-1120°C (at higher temperatures deep cracks are formed,  
particularly on the internal surface and in the tempera-  
ture range 1100-800°C the quality of tubes deteriorates,  
as well as the resistance to deformation sharply increases);  
d) on rolling according to the continuous type of mill,  
individual reduction in a pass should not exceed 12% and  
the total reduction 50%; on rolling according to the  
automatic type of mill 12% and 40% correspondingly;  
e) the velocity of rolling should not exceed 1.7 m/sec.  
Hot rolled tubes were dressed, annealed at 1100°C with  
subsequent cooling in water and cold rolled or drawn  
with satisfactory results. However, the above technology  
of production presents many difficulties and therefore a  
direct cold rolling of cast thin-walled bushings was  
tested. The following steels were tested Kh25N20,  
1Kh18N12E, Kh19N28M3D4 and Kh23N23M3D} (the latter two  
steels could not be hot rolled). Machined bushings were

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230000-11/31

The Production of Seamless Tubes from Cast Bushings by the  
Vacuo-Crystallisation Method

thermally treated (heating to 1250, half-hour soaking, cooling in air) and cold rolled. After each rolling thermal treatment was repeated (heating to 1250, half-hour soaking, cooling in water). The rolling should be carried out with a reduction not exceeding 1% and a velocity up to 2.5 m/min. It was shown that rolling can be done without preliminary annealing of bushings provided their surface is satisfactory. It is pointed out that for the industrial application of the above technology, further improvement of the technology of cast bushings and their more efficient production is necessary. There are 2 figures and 7 references, all of them from the Soviet

Card 3/3



V. L. MARK, V. YE.

18(1,3)

PHASE I BOOK EXPLOITATION

SOV/3402

Soveshchaniye po primeneniya redkozemel'nykh elementov dlya uluchsheniya fiziko-mekhanicheskikh svoystv konstruktsionnykh i spetsial'nykh staley i splavov

Redkozemel'nyye elementy v stalyakh i splavakh; trudy soveshchaniya.... (Rare Earth Elements In Steels and Alloys; Transactions of a Conference on the Use of Rare Earth Elements To Improve the Physical and Mechanical Properties of Structural and Special Steels and Alloys) Moscow, Metallurgizdat, 1959. 246 p. Errata slip inserted. 3,150 copies printed.

Ed.: A. A. Prozhogin; Ed. of Publishing House: A. L. Ozeretskaya; Tech. Ed.: P. G. Islent'yeva.

PURPOSE: This book is intended for engineers, technicians and scientists engaged in the metallurgy of heavy and nonferrous metals, and may be used by students of higher educational schools, who are specializing in the metallurgical science of these metals.

Card 1/5

Rare Earth Elements (Cont)

SOV/3402

**COVERAGE:** The collection contains 14 articles which give general results of investigations and uses of rare earths as alloying components in steels and alloys. The influence of rare earth additives in improving the technical properties of structural, fire-resistant and other steels and alloys is also described. Figures, tables and references (mostly Soviet) accompany each article. No personalities are mentioned.

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Verbol'skaya, Ye. D., Engineer; I. V. Isakov, Engineer; and

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- A. Ye. Khlebnikov, Doctor of Technical Sciences. The Effect of Cerium Additives on the Properties of Cr-Ni-Mo Steel for Shaped Steel Casting 118
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AVAILABLE: Library of Congress

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TM/os  
3/23/60

NE Y MARK, V. Ye

18(0) PHASE I BOOK EXPLOITATION SOV/2125

Tsentral'nyy nauchno-issledovatel'skiy institut Chernoy metallurgii. Institut Metallovedeniya i fiziki metallov

Problemy metallovedeniya i fiziki metallov (Problems in Physical Metallurgy and Metallophysics) Moscow Metallurgizdat, 1959. 240 p. (Series: It's: Sbornik trudov, 6). Errata slip inserted. 3,600 copies printed.

Additional Sponsoring Agency: USSR. Gosudarstvennaya planovaya komissiya.

Ed. of Publishing House: Ye. M. Berlin; Tech. Ed.: F. J. Isent'yeva; Editorial Board: D. B. Kamenetskaya, B. Ya. Lyubov (Tech. Ed.), Ye. S. Spontov, L. M. Utevaliy, L. A. Shvartsman, and V. I. Malkin.

PURPOSE: This book is intended for metallurgists, metallurgical engineers, and specialists in the physics of metals.

COVERAGE: The papers in this collection present the results of investigations conducted between 1954 and 1956. Subjects

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covered include crystallization of metals, physical methods of influencing the processes of crystallization, problems in the physical chemistry of metallurgical processes, development of new methods and equipment for investigating metals, and production control. References follow each article.

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NEWMARK, V. Ye.

PHASE I BOOK EXPLOITATION SOV/2125

18(0)

Tsentral'nyy nauchno-issledovatel'skiy institut Chernoy metallurgii. Institut Metallovedeniya i fiziki metallov

Problemy metallorodeniya i fiziki metallov (Problems in Physical Metallurgy and Metallophysics) Moscow, Metallurgizdat, 1959. 340 p. (Series: Its: Zhornik trudov, b) Errata slip inserted. 3,600 copies printed.

Additional Sponsoring Agency: USSR. Gosudarstvennaya planovaya komissiya.

Ed. of Publishing House: Ye. N. Berlin; Tech. Ed.: P. G. Kalent'yeva; Editorial Board: D. S. Kamenskaya, B. Ya. Lyubov (Resp. Ed.), Ye. Z. Spokor, L. N. Grvinsky, L. A. Shvartzman, and V. I. Malkin.

PURPOSE: This book is intended for metallurgists, metallurgical engineers, and specialists in the physics of metals.

COVERAGE: The papers in this collection present the results of investigations conducted between 1954 and 1956. Subjects

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covered include crystallization of metals, physical methods of influencing the processes of crystallization, problems in the physical chemistry of metallurgical processes, development of new methods and equipment for investigating metals, and production control. References follow each article.

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S/137/62/000/004/113/201  
A052/A101

187500  
AUTHORS: Dukhin, A. I., Neymark, V. Ye.

TITLE: The effect of boron and titanium on steel supercooling

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 51, abstract 41305  
("Sb. tr. In-t metalloved. i fiz. metallov Tsent. n.-i. in-ta  
chernoy metallurgii", no. 6, 1959, 34 - 38)

TEXT: The effect of B (up to 0.04%) and Ti (up to 1%) additions on the supercooling of stainless X 18H 9 (Kh18N9) and X 23H 18 (Kh23N18) Cr-Ni-steels and X 27 (Kh27) Cr-steel cooled at a rate of 25 degree/sec from a liquid state was investigated. About 3 g of investigated steel was placed in an alundum or quartz crucible and smelted in a vacuum or in a protective atmosphere. It has been found that Kh23N18 steel without additions at the 1st remelting supercools by 100 - 150°C. After 2 - 3 remeltings the supercooling reaches 220 - 250°C. Addition of Ti to steel of 0.1, 0.25, 0.5% reduces the supercooling to 205, 70 and 50°C respectively. At the Ti content of 1% no supercooling could be recorded. At repeated remeltings of Kh23N18 steel with 0.25 and 0.5% Ti the supercooling increases to 110 - 150°C but does not reach the value of the supercooling of steel

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The effect of boron and titanium on steel supercooling

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A052/A101

without Ti. An addition of up to 0.01% B reduces supercooling, a further increase of B up to 0.2% does not change the supercooling and at 0.04% B the supercooling somewhat increases. Kh 27 steel practically does not supercool, therefore the effect of modifiers on its supercooling was not studied. Kh18N9 steel without additions supercools by 325°C. 0.25 - 0.5% Ti reduces the supercooling to 220 - 300°C. Assumptions on the mechanism of nucleus formation in the investigated steels are made.

N. Kalinkina

[Abstracter's note: Complete translation]

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S/137/62/000/003/023/191  
A006/A101

AUTHORS: Neymark, V. Ye., Dukhin, A. I.

TITLE: The effect of modifiers on the structure, deformation of the crust, and the solidification rate of a steel ingot

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 44, abstract 3V270 ("Sb. tr. In-t metalloved. i fiz. metallov Tsent. n.-i. in-ta chernoy metallurgii", 1959, no. 6, 39-62)

TEXT: The effect of modifiers on the deformability and solidification rate of the crust was investigated on hollow ingots produced by the method of vacuum crystallization. The following steel grades were selected for the investigation: Ст.3 (St.3) carbon, X27 (Kh27) ferrite; X18H9 (Kh18N9) and X23N18 (Kh23N18) austenite steels and admixtures of Ti, Zr, B, Al, Mg, N, Ca. Deformation of the steel crust was characterized by the degree of difference in the wall thickness of the hollow ingot:  $[(\delta - \alpha) / \delta] \cdot 100\%$  where  $\alpha$  is the minimum and  $\delta$  the maximum thickness of the ring. Rings of equal height were cut at 100 mm distance from the lower ingot end. The solidification rate of the steel crust was determined from the weight - length ratio of the cut-out ring. For steel melting, standard

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A006/A101

The effect of modifiers on the structure ...

charge materials were used, such as Armco-Fe, St.10-10, Ni000 and Fe-Cr-0000 steels. The steels were melted in 50-kg high-frequency and 1 ton-electric arc furnaces. Hollow ingots were produced in vacuum steel molds with 90 mm internal diameter and 130 mm external diameter. From each heat produced in a high-frequency furnace, 4 hollow ingots were obtained: one without admixtures and three with admixtures of different concentrations. The admixtures were introduced directly into the furnace prior to the teeming of the metal. Heats from the arc furnace were teemed into 50-kg ladles where the corresponding admixtures had been preliminarily introduced. Then the hollow ingots were taken off. It was established that when adding 0.005% B the difference in the thickness of walls of hollow ingots decreases from 41% (hollow ingot without admixture) to 24.5%. If B concentration is raised to 0.01% the difference is 18%, and at 0.05% B it decreases down to 12.5%. Additions of B considerably increase the solidification rate of hollow St.3 steel ingots. When adding 0.2% Ti, the difference in the thickness of walls decreases from 35 to 21.7%. The addition of 0.1% Ti raised the solidification rate of a hollow ingot by 26%, and 0.2% Ti, by 17%. The addition of 0.1% Zr reduced the difference in the wall thickness of hollow St.3 steel ingots from 35 to 21.5% and 0.2% Zr to 17.1%; Zr considerably increases the solidification rate of hollow ingots: 0.1% Zr by 37.1%; 0.2% Zr by 30% and

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The effect of modifiers on the structure ...

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0.3% Zr by 18%. Additions of B and Ti did not considerably affect the difference in the wall thickness of hollow Kh27 steel ingots, but the solidification rate of the ingot increased by 34% when adding 0.01% B and by 22% when adding 0.3% Ti. Ti and Zr introduced jointly to the molten metal (0.6% Ti and 0.3% Zr) reduced deformation from 29.4 to 1.5% and increased the solidification rate of Kh23N18 steel crust by 13 - 18%. Modifiers in optimum concentrations substantially affect the macrostructure of a St.3 ingot; B in a 0.003 - 0.005% concentration eliminates the columnar structure of an ingot; Ti and Zr promote the formation of a homogeneous columnar structure with very fine crystals. B and Ti refine strongly the dendritic structure of Kh18N9 and Kh23N18 steel at a high crystallization rate. There are 15 references.

G. Lyubimova

[Abstracter's note: Complete translation]

Card 3/3

S/137/62/000/006/015/163  
A006/A101

AUTHOR: Neymark, V. Ye.

TITLE: Production of high-alloy steel sleeves by the vacuum-crystallization method for their rolling into pipes

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 38, abstract 6V2b2 ("Sb. tr. In-t metalloved. i fiz. metallov Tsent. n.-i. in-ta chernoy metallurgii", 1959, v. 6, 137 - 168)

TEXT: The author investigated the possibility of producing pipes from hollow ingots. For this purpose the vacuum-crystallization method was employed to produce sleeves from carbon steel and various alloy grades, such as: carbon 1 X 18 H 9 T (1Kh18N9T), X 25 H 20 (Kh25N20), 3M211 (EI211), 3M402 (EI402), 3M432 (EI432), X 30 H 70 (Kh30N70), X 25 H 70 M 5 (Kh25N70M5), 3M15 (ShKh15). The heats were made in 50-kg high-frequency furnaces. To produce the sleeves, steel "vacuum" molds were used of 80 - 90 mm in diameter and 10 - 20 mm wall thickness. In the majority of cases, the quality of the external surface of the sleeve was good, and the quality of internal surfaces was varied for different steel grades.

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Production of...

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In EI402, EI432 and other steel sleeves the internal surface shape approached a cylinder; in Kh25N20, EI211 and other steel sleeves considerable transverse difference of walls was observed, and the internal surfaces were often canted. To reveal the causes of face formation in hollow ingots, an investigation with low-melting metals was carried out (Sn, Pb, Zn, Al, Mg and Sb). Heats were conducted in a 5 dm<sup>3</sup> nichrome crucible-type furnace. To obtain hollow ingots from low-melting metals steel molds were used of 80 mm in diameter and with 15 mm thick walls. Recommendations are given to obtain high-quality sleeves by the vacuum-crystallization method: 1. Since the quality of the external and internal sleeve surface depends on the gas-saturation of the melt, the charge materials should be degassed by calcination in a vacuum; moisture-less fluxes should be employed; the melt should be protected against gas saturation and the metal should be degassed with the aid of small admixtures binding the O, H and N content and by processing the liquid steel in a vacuum prior to removing the sleeves. 2. To obtain a satisfactory external sleeve surface, the mold channel must be cleaned from contaminations which are the source of gas liberation during the filling of the mold with metal; occluded gases must be removed by heating the mold walls in a vacuum. 3. The formation of a transverse wall difference in the sleeves can be

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prevented by modifying the melt with small admixtures, retarded heat elimination and rotation of the mold during the crystallizing of the metal in it. 4. To reduce a longitudinal wall difference of sleeves, non-uniform heat elimination can be brought about along the mold in such a manner that the solidification rate is controlled over the sleeve height. 5. Porosity of the internal sleeve surfaces can be eliminated by machining or flashing the porous layer with an atomic-hydrogen arc torch. 6. A coarse structure on the internal sleeve surfaces can be removed by modifying the melt with small admixtures. 7. The sleeve length can be increased by filling a rotating vacuum mold in an inclined position.

G. Lyubimova

[Abstracter's note: Complete translation]

1

Card 3/3

S/137/62/000/003/018/191  
AC06/A101

AUTHORS: Yemyashev, A. V., Zubko, A. M., Neymark, V. Ye.

TITLE: On the problem of the effect of vacuum melting and teeming upon the metal properties and the ingot quality

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 41, abstract 3V258 ("Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii", 1959, v. 6, 169-186)

TEXT: At a TsNIICherMET pilot plant magnetically soft Fe-Co alloy 50:2 (K50F2) was melted in a high-frequency vacuum furnace; the alloy contains in %:  $\geq 0.05$  C;  $\geq 0.2$  Si;  $\geq 0.2$  Mn, 49 - 51 Co; 1.5 - 2 V;  $\geq 0.5$  Ni,  $\geq 0.025$  S and P, the rest Fe. In the furnace space in cold state a vacuum was produced of the order of  $1 \cdot 10^{-3}$  mm Hg. The heats were produced in  $ZrO_2$  crucibles which were manufactured directly on the furnace. One crucible withstands  $\approx 40$  heats. The melted ingots weigh 30 - 45 kg. In the vacuum-melted metal, the content of gas, non-metallic impurities and magnetic properties were determined. It was established that the melting of K50F2 alloy in a vacuum of 500 - 50 mm Hg was not accompanied by changes in the chemical composition of the alloy, except Si, whose

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On the problem of the effect ...

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amount decreased by 50%. The content of gases in the metal varies from 10 to 20 ml/100 g, instead of 60 ml/100 g contained in metal that was melted by conventional technology. The amount of non-metallic impurities in the alloy decreased substantially, and its magnetic properties are improved. Studies of the effect of vacuum melting and teeming of low-carbon nickel steel, containing 0.1 - 0.15% C and 2 - 3% Ni, on the formation of bubbles in the ingot, have shown that gas bubbles are formed during the teeming into vacuum molds of steel that had been subjected to short-time vacuum treatment in the ladle at 30 - 40 mm Hg pressure. Therefore teeming of metal that had been vacuum-treated in the ladle should be carried out in inert atmosphere.

G. Lyubimova

[Abstracter's note: Complete translation]

Card 2/2

GUREVICH, Ya.B., kand.tekhn.nauk; NEYMARK, V.Ye., kand.fiz.-mat.nauk

Selecting conditions of deforming cast EI530 and EI533 steel.  
Probl.metall. i fiz.met. no.6:527-536 '59. (MIRA 12:8)  
(Steel alloys--Testing) (Deformations (Mechanics))

AUTHORS: Neymark, V.Ye. and Rozenberg, V.M. <sup>SOV/126-8-2-24/26</sup>

TITLE: Influence of Boron on Recrystallization of Silicon Iron

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 2, pp 314 - 316 (USSR)

ABSTRACT: The authors have studied the influence of boron on the kinetics of the recrystallization of an iron-silicon alloy with 3% Si, 0.03% C, 0.2% Mn, 0.01% P and 0, 0.003, 0.005 or 0.01% B. X-ray methods were used to investigate the cold-rolled (60% reduction) metal. Figure 1 shows the relation between temperature and time for the start of recrystallization; the dependence of the data on boron concentration is shown in Figure 2. The activation energy rises continuously with increasing boron concentration. For the 0.01% B alloy the activation energy rises with decreasing temperature of the start of recrystallization; an effect similar to one observed by Rozenberg with E.Z. Kaminskiy (Ref 2) and the authors suggest that this should be studied further.

Card1/2

Influence of Boron on Recrystallization of Silicon Iron <sup>SOV/126-8-2-24/26</sup>

There are 2 figures and 2 Soviet references.

SUBMITTED: October 16, 1958

Card 2/2

PHASE I BOOK REPRODUCTION 00V/1344

Sovetskaya po teoriu litseynykh professorov, 4th  
Kristallicheskaya metallografiya (Crystallization of Metals);  
Transactions of the Fourth Conference on the Theory of Casting Processes)  
Moscow, Izd-vo AM GSSR, 1960. 545 p. 3,400 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po  
tehnologii mashinostroyeniya.  
Izop. Ed.: B. G. Gulyayev, Doctor of Technical Sciences, Professor; Ed. of  
Publishing House: V. S. Babitskiy; Tech. Ed.: S. G. Filbinova.

PURPOSE: This book is intended for metallurgists and scientific workers. It  
may also be useful to technical personnel at foundries.  
COVERAGE: The book contains the transactions of the Fourth Conference (1958) on  
the Theory of Casting Processes. [The previous 3 conferences were held in 1955,  
1957, and 1959]. The book contains the following sections: 1) The theory of  
hydrodynamics of molten metals (1955); 2) Solidification of metals (1956); and  
3) Casting defects and their prevention (1959). The book also contains the  
literature on problems in the crystallization of metals, including the crystallization of constructional steels,  
alloy steels with special properties, cast iron, and of nonferrous alloys, are  
discussed. Recognition is given to D. E. Chernov and S. T. Odnoboy and their  
students, B. G. Gulyayev and A. G. Spasskiy, for their contributions to the  
understanding of the basic problems involved in the theory of crystallization  
of ferrous and nonferrous metals and alloys. Academician S. V. Shchegolev is  
also mentioned in connection with his work on the planning of research on  
crystal formation. References accompany several of the articles.

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II. CRYSTALLIZATION OF CONSTRUCTIONAL STEEL

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REYNOLDS, V. V.

S/137/61/000/008/014/037  
A060/A101

AUTHOR: Neymark, V. E.

TITLE: Effect of modifiers upon the skin deformation and the ingot crystallization-rate

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1961, 43, abstract 8V269 (V sb. "Kristallizatsiya metallov", Moscow, AN SSSR, 1960, 86-93)

TEXT: The hardening process was studied in structural steel 3, stainless steels X18N9, X23N18, 3M 530, X27 (Kh18N9, Kh23N18, EI530, Kh27) and transformer steel. It was established that addition of 0.005 - 0.02% B reduce the deformation of hollow ingots of steel 3, Kh23N18, and transformer steel, and have no effect on the deformation of hollow ingots of steel Kh18N9 and Kh27. Addition of Ti reduces the deformation in hollow ingots of steel 3, Kh23N18, and EI530. Zr reduces somewhat the deformation of hollow ingots of steel 3, and in combination with Ti considerably reduces the deformation of hollow ingots of steel Kh23N18. It is also noted that the stronger the variability in wall thickness of the ingot, the greater the effect of the introduced modifier in reducing it. The hardening rate of hollow ingots of steel 3 increases under additions of B. ✓

Card 1/2

Effect of modifiers upon the skin ...

3/137/61/000/008/014/037  
A060/A101

Ti and Zr; the hardening rate of steel Kh23N18 increases under addition of 0.5% Ti; addition of B affects the hardening rate of steel Kh27; the hardening rate and wall-thickness variability of hollow ingots of steel Kh18N9 is not affected by addition of modifiers. An investigation of cylindrical ingots obtained on a semicontinuous casting machine has established that the structure of the ingots modified by priming, and also by Ti and B, becomes finer and the central porosity is reduced, as well as the number of cracks in the ingot. It is discovered that the porosity is related to the deformation of the skin being formed. The pores are concentrated at the inside surface of the tubular ingot and their embedding depth depends upon the gas saturation of the metal, which may be lowered by an appropriate choice of modifiers. It is indicated that the influence of modifiers upon the reduction of deformations and increase in hardening rate of hollow ingots is explained by an increase in the rate of formation of centers of crystallization, causing a simultaneous growth of crystals with approximately equal rates. There are 8 references.

V. Gasiina

[Abstracter's note: Complete translation]

Card 2/2

S/180/60/000/006/011/030  
E111/E352

AUTHOR: Neymark, V. Ye. (Moscow)

TITLE: The Connection Between the Structure of a Liquid and  
the Substance in the Solid State

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye  
tekhnicheskikh nauk, Metallurgiya i toplivo,  
1960, No. 6, pp. 69 - 72

TEXT: This is a critical survey based on published work of  
development in the last twenty-five years in research on  
liquid-solid structural relations. The author and V.I. Danilov  
have made several contributions in this field (Refs. 1, 4, 6, 7,  
8, 9, 13 and 15). The survey deals with water, <sup>lead,</sup> tin and bismuth. ✓  
Attention is paid to the effect of liquid supercooling on solid  
structure and the influence of inoculating additions. In  
studying the latter, impurities in both liquid and addition  
must be considered and the effect on the work of nucleation is  
important. The author's conclusion from his own work is that  
the influence of impurities on crystallization cannot always  
be associated with their activation and de-activation. A

Card 1/2



S/180/60/000/006/011/030  
E111/E352

The Connection Between the Structure of a Liquid and the  
Substance in the Solid State

so far unexplained factor is the influence of the volume of the crystallizing liquid on supersaturation and grain size. From an analysis of data of viscosity determinations (Refs 17, 18), surface tension (Ref. 11), electrical conductivity (Ref. 19) and magnetic susceptibility (Ref. 20), the author concludes that structural changes in the liquid can affect crystallization of the ingot, gas solubility in the melt, crust deformation during solidification and hence tendency to surface cracks in ingots. He suggests use of a wider range of properties in studying the mechanism of inoculation to enable the correct agent to be chosen. There are 20 references: 19 Soviet and 1 non-Soviet.

SUBMITTED: August 26, 1960

Card 2/2

S/133/60/000/009/002/015  
A054/A029

AUTHORS: Maslov, A.M. Neymark, V.Ye., Candidates of Technical Sciences

TITLE: Determination of the Crystallization Boundary in Ingots Cast by the Continuous Method

PERIODICAL: Stal', 1960<sup>20</sup>, No. 9, pp. 797-799

TEXT: This is a method for determining the boundary of crystallization, in which contrary to the methods so far applied, ground ferrous sulfide in ampoules of copper or aluminum is introduced into the non-crystallizing center of the ingot. The method was developed by the Laboratory of Crystallization of the Institut metallovedeniya i fiziki metallov (Institute of Metallography and Metal-Physics) of TsNIICHM. The laboratory test was carried out (with the cooperation of V.I. Malashkin and G.I. Yakovlev) on ingots of Cm.3 (St. 3) type steel, poured into pig-iron ingot molds and with water-cooled copper crystallizer (diameter = 100 mm) on a semi-continuous casting machine of the TsNIICHM. From the template cut-out of the ingots Baumann sulfur prints were made, which clearly showed the boundary forming between the ingot core enriched with sulfur and the flange which crystallizes at the moment when ferrous sulfide is introduced into the cast. The chemical analysis proved that the sulfur added to the ingot in

S/133/60/000/009/002/015  
A054/A029

Determination of the Crystallization Boundary in Ingots Cast by the Continuous Method

the form of ferrous sulfide in an amount of 0.06 % of the ingot weight, will be distributed unequally, the sulfur concentration in the central zone of the ingot is several times higher than at the flanges. The method was tested on an industrial scale (with the cooperation of L.B. Shenderov) on St 3 type ingots cast by the continuous method. Ferrous sulfide with a sulfur content of 26 % was added in a quantity of 2 kg/t to the crystallizing ingot immediately after pouring into the tun dish: the copper ampoules containing the ferrous sulfide were fixed on a steel rod about 3 m in length with a diameter of 12 mm and were immersed 2 m deep into the liquid center of the ingot. During the test no spattering of the melt from the crystallizer was observed proving the safety of the method. The crystallization borders determined by the ferrous sulfide method are in accordance with those defined by another method in which radioactive indicators are applied. The usefulness of the new method generally depends on the solution velocity of ferrous sulfide in the liquid center of the ingot. By comparing the test results obtained for various steel types, it will be possible to determine the influence of various factors (modifacotrs, temperature, lubrica-

Card 2/3

S/133/60/000/009/002/015  
A054/A029

Determination of the Crystallization Boundary in Ingots Cast by the Continuous Method

tion, etc.) on the decrease in the deformation of the ingot skin during continuous casting. There are 4 figures and 2 Soviet references.

✓  
—

Card 3/3

S/128/62/000/003/003/00  
AC04/K127

AUTHOR: Neymark, V. Ye.

TITLE: The effect of modifiers and some other factors on the quality of hollow ingots produced by the vacuum crystallization method

PERIODICAL: Liteynoye proizvodstvo, no. 3, 1962, 24 - 28

TEXT: The author presents a detailed comprehensive report on the characteristic features of vacuum crystallization in the production of hollow ingots from nonferrous metals, steel and high-melting alloys. This method has been developed by TsNIICHM [Ref. 8: Gurevich, Ya. B., Neymark, V. Ye. "Stal'", no. 5, 1958]. Investigations were carried out to study the possibility of producing hollow ingots from various steel grades, including X 15 H 25 M 6 (Kh15N25M6), X 25 H 70 M 5 (Kh25N70M5), Permalloy, cast iron, transformer steel, etc. by the vacuum crystallization method. The technology of hollow ingot casting by this method was developed under plant conditions at the experimental shop of the Yuzhno-trubnyy Plant. Together with the designers of the Plant under the supervision of N. I. Shevchenko, a merry-go-round installation with six crystallizers of 1,600 mm length and 90 mm in diameter has been designed which was mounted on

Card 1/2

The effect of modifiers and...

S/128/62/000/003/003/007  
A004/A127

a trolley and traveling between two crucibles of an h-f furnace. The author describes the tests which were carried out with various steel grades and comments in particular on the various forms of nonuniformity in wall thickness of hollow ingots. It was found that the crystallization of steel in vacuum prevents the outer layer of the hollow ingot from oxidation so that it is not necessary to remove this layer. The quality of the inner surface of hollow ingots is mainly characterized by the depth of pore and crack formation. The origination of porosity is analyzed and ways and means are shown to prevent these defects. There are 8 figures and 11 Soviet-bloc references.

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S/128/62/000/009/001/001  
ACC4/A127

AUTHORS: Neymark, V. Ye., Teumin, I. I., Fishkis, M. Ya.

TITLE: The effect of inoculants and insoluble impurities on the crystallization of bismuth and zinc in the field of elastic vibrations

PERIODICAL: Liteynoye proizvodstvo, no. 9, 1962, 31 - 62

TEXT: Elastic vibrations acting on metals and alloys during the crystallization process substantially improve the macro- and microstructure of ingots. The authors present various opinions found in literature on the mechanism of the vibration effect. In the tests carried out by the authors with bismuth and zinc it was found that the effect of elastic vibrations on the structure and properties of metals is more efficacious in the presence of even small amounts of impurities in the melt. Soluble and insoluble inoculants were tested, sodium being used for bismuth and magnesium for zinc. The authors give a description of the tests and the test installation, present a number of graphs showing the effect of inoculants on the bismuth grain size and the zinc grain size - amount of magnesium curve, and microsection photos. The connection between the initial and final structures of the specimens indicate that there are more insoluble impurities in the fine-grained

Card 1/2

The effect of inoculants and insoluble impurities on... 3/128/62/000/005/A127  
A004/A127

than in the coarse-grained zone. With inoculant concentrations lower than the optimum value, both the vibration and soluble additives reduce  $\sigma$  and their combined effect promotes a decrease of the work of nucleus formation. If the inoculant concentrations are higher than the optimum, the elastic vibrations destroy the adsorbing layers on the nucleus surface, which have not yet reached the critical size, causing the crystallization centers in the melt to increase. There are 5 figures and 9 references.



Card 2/2



S/717/62/000/007/008/010  
D207/D302

AUTHOR: Neymark, V.Ye., Candidate of Physico-Mathematical Sciences  
TITLE: The effect of some factors on the process of crystallization of a modified metal  
SOURCE: Dnepropetrovsk. Institut metallovedeniya i fiziki metallov. Problemy metallovedeniya i fiziki metallov, no. 7, Moscow, 1962, 417 - 449

TEXT: The author reviews the published literature and reports his own results on the effects on crystallization of metals and alloys of seeding, modifying with small amounts ( $\leq 0.2\%$ ) of various elements, superheating and the rate of cooling. The materials investigated were: Zinc with Mg as a modifier; aluminum with Ti as a modifier; ferrite transformer steel (3% Si) with Ti, B, Al as modifiers;  $1 \times 18 + 9$  (Kh27) steel with Ti, Zr, Mg, B, N, Ce as modifiers;  $1 \times 18 + 9$  (1Kh18N9) steel; constructional steel of the unspecified composition with Al as a modifier; tin with Na as a modifier. The following general conclusions are drawn from the results: 1) If a seed is used,

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The effect of some factors on the ...

S/717/62/000/007/008/010  
D207/D302

superheating may destroy the ability of impurities in the seed to form crystallization nuclei. This 'deactivation' of impurities can be avoided by adding modifiers which raise the deactivation temperature. II) Studies of supercooling, surface tension of the melt, and grain structure of the ingot indicated that Na and Ti are suitable modifiers for tin and steels, respectively. III) The rate of heating and the degree of superheating affect strongly the final grain structure. Fine structure may be usually obtained by slow cooling and/or by adding modifiers. Acknowledgements are made to M.Ya. Fishkis, A.I. Dukhin, L.V. Roshchina, L.L. Kunin, A.A. Nefedov, M.M. Shapiro, K.D. Pavlova, N.A. Nikolayev, Ye.I. Akimova, and A.M. Maslov, all of whom took part in the experimental work. There are 12 figures, 4 tables, and 50 references. 41 Soviet-bloc and 9 non-Soviet-bloc.

Card 2/2

S/126/62/013/006/007/018  
EO71/E192

AUTHORS: Abramov, O.V., ~~Neymark, V.Ye.~~ and Teumin, I.I.  
TITLE: Some special features and action of ultrasonics on the process of crystallization of metals and alloys  
PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.6, 1962, 875-878

TEXT: The authors continue their earlier work (Ref.1: Ya.B. Gurevich, V.I. Leont'yev, I.I. Teumin, Problemy metallovedeniya i fiziki metallov (Problems of Metallography and the Physics of Metals,) 6, Moscow, Metallurgizdat, 1959) on the effect of ultrasonic vibration on the crystallization of metals and alloys, experimenting on liquid bismuth and antimony. The metal contained in a crucible was heated in a resistance furnace and the rate of cooling of the melt was controlled. Ultrasonic vibrations were applied from the top, the tip of the velocity transformer being preheated to a few degrees above the crystallization temperature of the metal. The experiments were carried out at a minimum ultrasonic intensity to eliminate  
Card 1/3

Some special features and action ... S/126/62/013/006/007/018  
E071/E192

cavitation and dispersion. The magnetostrictive vibrator was energised by a 10 kW ultrasonic generator, and the output measured with a hot wire ammeter. Treatment of liquid bismuth and antimony with ultrasonic vibrations considerably decreases the duration of existence of supercooled liquid and leads to the formation of fine grain structure. The time of appearance of the first crystallization centre for antimony was by 3 orders lower in the irradiated melt than in the non-irradiated melt, and for bismuth by 1 order lower. The influence of insoluble admixtures on the diminution of the structure in an ultrasonic field was tested on aluminium with and without additions of calcium carbonate or alumina. Additions of the above substances in amounts of 0.5, 0.25 and 0.1% wt. were made in the form of fine powder (of various degrees of fineness) enclosed in an aluminium foil. The metal heated to 680 °C was poured at 665 °C into a steel mould with a vibrator attached at the bottom. The power was varied from  $P_{max}$  to 0.1  $P_{max}$ . It was found that admixtures increase the effect of vibrations, although the admixtures in amounts up to 0.1% wt. in the absence of vibrations do not lead to the diminution of the grain structure.

Card 2/3

Some special features and action... S/126/62/013/006/007/018  
E071/E192

The ultrasonic vibration treatment of the metal containing admixtures in quantities up to 0.1% wt. at temperatures above the crystallization temperature did not cause the diminution of the grain structure. It is concluded that the effect of diminution of the grain structure of the metal crystallized in an ultrasonic field in the presence of admixtures can be explained only by the activation of the admixture in this field.  
There are 2 figures.

ASSOCIATION: Institut metallovedeniya i fiziki metallov, TsNIChM  
(Institute of Metallography and Physics of Metals,  
TsNIChM)

SUBMITTED: August 23, 1961

Card 3/3

L 19748-63

EWP(k)/EWP(q)/EWT(m)/BDS

AFFTC/ASD Pf-4 JD/EW

ACCESSION NR: AT3001936

S/2912/62/000/000/0358/0372

AUTHORS: Abramov, O.V.; Neynark, V. Ye.; Teumin, L.I.

28  
30B

TITLE: On the characteristics and the mechanism of the effect of elastic vibrations on the crystallization process of metals and alloys

SOURCE: Kristallizatsiya i fazovyye perekhody. Minsk, Izd-vo AN BSSR, 1962, 358-372

TOPIC TAGS: crystal, crystallization, crystallography, elastic, vibration, ultrasound, ultrasonic, ultrasonics, grain size, columnar, structure, phase, distribution, nucleus, nucleation, supercooling, surface tension, impurity, stainless steel, 1Kh18N9, Kh25N20, tool steel, EI347, Al, AV000

ABSTRACT: The survey portion of this paper discusses briefly the effects of ultrasound (US) on (a) decrease in the mean magnitude of the grain; (b) elimination or at least alteration of the columnar structure; (c) change in the character of the phase distribution. A brief discussion is set forth of the frequently hypothesized causes of grain comminution and elimination or alteration of columnar structure, namely: (1) The breakup and dispersion of crystals growing on the walls, and the breaking off of particles from them, which subsequently serve as crystallization

Cerd 1/64

L 19748-63  
ACCESSION NR: AT3001936

centers (CC); (2) the increase in probability of spontaneous nucleation in a US field; (3) some particular effect of impurities in a US field. In examining the possible increase in probability of nucleation in a US field, the importance of viscous friction arising in the motion of solid particles (nuclei) relative to a viscous liquid is examined. The friction force may contribute to a breaking off from the parent crystal of smaller crystals, which may serve as new CC's, and also to changes in the intensity of the surface tension (ST) on the boundary between the microcrystal and the liquid phase. Following a brief analytical exploration it is concluded that a possible action of elastic oscillations on the nucleation may be expressed in the reduction of the work of nucleus formation through viscous-friction forces. The mechanism of the reduction in ST is conceived as being derived from an "attachment" of liquid molecules to the crystalline-nucleus surface as a result of the motion of the nucleus and entrainment therewith, whereupon the difference in structure of the liquid and solid phases is reduced and the ST decreases. Inasmuch as a direct measurement of the ST at the fusion-nucleus boundary during crystallization does not appear to be possible, it is postulated that its magnitude can be determined at the boundary of the metastable fusion, that is, by the degree of supercooling. If, for some reason, the supercooling of the fusion decreases, this is taken as an indication that the ST has decreased. Thus, the ST can be estimated from the waiting time for the appearance of the first CC, that is, from the time during which the fused metal is

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L 19748-63

ACCESSION NR: AT3001936

in a supercooled state. Experiments for that purpose with Bi and As are described. The crucible with the fusion was first heated in a resistance furnace and then cooled. Elastic vibrations were introduced into the fusion from above through a special wave guide. Minimal vibratory intensities at which no cavitation or dispersion occurred were employed. A magnetostrictive vibrator, fed by a US generator (10 kw), was used. Exposure time: 2 to 10 sec. The waiting time for the first CC in As was 3 orders of magnitude smaller in the irradiated fusion than in the nonirradiated fusion; in Bi it was 1 order of magnitude less. No change in crystalline structure was observed in these short-term tests. Tests were made (with the participation of M. Ya. Fishkis) to determine experimentally the predominant first nucleation in a US field on insoluble impurities in a metal. The effect of the concentration and dispersion of impurities on the structures of an ingot crystallized in a field of elastic vibrations was also investigated. <sup>27</sup>AV000 <sup>5</sup>Al was employed. Impurities:  $\text{CaCO}_3$  and  $\text{Al}_2\text{O}_3$ , which, in suitable quantities, resulted in a refinement of the structure of the Al. From an analysis of the itemized experimental facts adduced it is postulated that the elastic vibrations evoke a dispersion of the insoluble impurities present in the fusion in a manner similar to that of solid particles suspended in a liquid medium. This dispersion of the impurities, the experiments show, will result in a comminution of the structure of an ingot. The formation of a more finely dispersed structure is also facilitated by the decrease

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L 19748-63

ACCESSION NR: AT3001936

3

of the effective ST resulting from the US vibrations. A test series was set up to investigate the dispersion of the solid particles of the impurity by elastic vibrations at T's above the crystallization T of the metal also. For this purpose, the fusion was heated to 700° and 0.5% CaCO<sub>3</sub> of a dispersivity of 0.10-0.25 mm was introduced. The fusion was exposed to elastic vibrations of the highest power introduced from above at a T of 670°. An identical experiment was made with the introduction of 0.5% of Al<sub>2</sub>O<sub>3</sub> of a dispersivity of >0.05 mm. No changes in structure in these specimens were discovered. Thus, the effect of the refinement of the structure of an ingot crystallized in an US field in the presence of the impurity can only be attributed to an activation of the impurity in the US field. Not all metals are affected similarly by elastic vibrations. For example, the structure of ingots of stainless steel 1Kh18N9 does not exhibit any noticeable changes under elastic vibrations, whereas the stainless steel Kh25N20, fused from identical charge materials and exposed to elastic vibrations of the same power, becomes greatly refined. The structure of the tool steel EI347 was not affected significantly by elastic vibrations. In substance it is concluded that one of the factors that determines the suitability of a metal for treatment by elastic vibrations is the magnitude of the work of formation of nuclei. The smaller that work, the more effectively can the alloy be treated by elastic vibration. Orig. art. has 5 figs.

Card 4/104

L 58282-65 EWT(1)/EWP(e)/EWT(m)/EWP(i)/EWA(d)/T/EWP(e)/EWP(x)/EWP(z)/EWP(b)

PF-4/PI-4 IJP(c) MJW/JD

ACCESSION NR: AR5012850

UR/0137/65/000/003/1008/1008

SOURCE: Ref. zh. Metallurgiya, Abs. 3149

43  
28

AUTHOR: Abramov, O. V.; Neymark, V. Ye.; Teumin, I. I.

TITLE: Treatment of certain steels of different classes with ultrasound

CITED SOURCE: Sb. Primeneniye ul'trazvuka v mashinostr. Minsk, Nauka i tekhnika, 1964, 57-60

TOPIC TAGS: steel, ultrasound, austenitic steel, ferritic steel, grain structure, phase composition, metal ductility, strength, iron carbide, iron boride, steel microstructure/ (S3 steel) Kh18 steel, Kh27 steel, Kh25N20 steel, Kh18N4 steel, Kh18N7 steel, Kh18N9 steel

TRANSLATION: The following types of ferritic and austenitic steels were

Card 1/2

I 58282-65

ACCESSION NR: AN5012850

increase in ductility and strength properties. Thus, for example, as a result of ultrasonic treatment,  $\sigma_{0.2}$  of K18 steel increases from 20 to 32.4 kg/mm<sup>2</sup>, delta from 2.7 to 10.2%, and phi from 3.1 to 39.8%. In alloys of the carbide class, as a result of ultrasonic treatment there are observed an insignificant change in the microstructure, elimination of the dendritic structure, and breaking down of the high melting phase. I. Tulupova,

SUB CODE: 1M

ENCL: 00

*RR*  
Card 2/2

2 2700-00 ENP(K)/ENI(M)/I/ENP(W)/ENP(T)/ETI IJP(c) JD/HW/JG

ACC NR: AP6018362

(A, N)

SOURCE CODE: UR/0089/66/020/005/0440/0442

AUTHOR: Al'shevskiy, L. Ye.; Kuz'michev, Yu. S.; Kurochkina, L. M.; Lupakov, I. S.; Neymark, V. Ye.; Teulin, I. I.

ORG: none

54  
B

TITLE: Effect of ultrasound on the ductility of high-boron stainless steels

SOURCE: Atomnaya energiya, v. 20, no. 5, 1966, 440-442

TOPIC TAGS: steel, stainless steel, high boron steel, boron containing steel, steel ultrasonic treatment, steel plasticity, steel ductility, steel tube, tube extrusion/Kh18N15 steel, Kh18N10 steel, Kh18N6G9 steel, Kh17 steel

ABSTRACT: The effect of ultrasound on the plasticity of Kh18N15, Kh18N10, Kh18N6G9 and Kh17 stainless steels containing 2-3.7% boron has been investigated. Boron at contents above 1.8% forms coarse hypereutectic borides which lower the steel plasticity. It was found, however, that the shape and size of the boride inclusions can be improved by applying ultrasonic vibration to liquid steel during cooling and solidification. The effect of ultrasound was found to depend on the metal temperature. Good results were obtained at a pouring temperature of 1500C. Ultrasound applied at this temperature broke down boride inclusions into small particles uniformly distributed throughout the mass of metal and considerably improved the steel plasticity, especially in rolling. Rolled tube billets 77 and 106 mm in

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UDC: 621.789.2:669.15

L 29563-66

ACC NR: AP6018362

diameter were successfully extruded at 1050—1140C with 80—86% reduction into satisfactory quality tubes 50 or 71 mm in diameter and 800 mm long with walls 5—6 mm thick. The structure of high-boron stainless steels also can be refined by homogenizing annealing at 1200—1250C. Orig. art. has: 3 figures. [ND]

SUB CODE: 13, 11/ SUBM DATE: 14Aug65/ ORIG REF: 003/ ATD PRESS: 5 014

Card 2/2 CC

KRONZON, P.S; NEYMARK, Ye.A.

Course of infectious hepatitis in children and its treatment. Vop.  
okh. mat. 1 det. 6 no.10:92 0 '61. (MIRA 14:11)

1. Iz Detskoy gorodskoy infektsionnoy bol'nitsy No.11 v Moskve.  
(HEPATITIS, INFECTIOUS)

NEYMARK, Ye.S., kand. med. nauk

Cerebral thrombophlebitis. Sov. med. zh. 1964:10-199-1000. (Mikroangiopatia)

1. Kafedra nervnykh bolezney (zav. - prof. P.A. Minozhen)  
Donetskogo meditsinskogo instituta.



NEYMARK, Ye.Z.

Treatment of stuttering neurosis according to the physiological nature of its mechanisms. Zhur.nevr. i psikh.55 no.7:518-519 '55. (MLRA 8:10)

1. Nevrologicheskaya klinika (zav.prof. K.F. Nikitin) Gosudarstvennogo bal'neologicheskogo nauchno-issledovatel'skogo instituta imeni I.V.Stalina.

(SPEECH DISORDERS,

stuttering, ther., artif. suppression technic)

1957 WPK, Ye. Z.:

1957 WPK, Ye. Z.: "Interaction of the role of hormones - e. g. stress, leads in the complex treatment of neuroses in the USSR." Crimian State Medical Inst. Conference, 1951. (Dissertation for the Degree of Candidate in Medical Science).

Source: Arkhivna literatura Vol. 2 1957

MEYMARK, Ye.2.

Clinical phenomena in diseases of sympathetic ganglia. Sov.med. 20  
no.11:73-74 N '56. (MLBA 10:1)

1. Iz 1-y kurortnoy polikliniki Sochi (dir. A.A.Korobeynikov)  
(GANGLIA, AUTONOMIC, dis.  
diag.)

NEYMARK, Ye.Z., TSIGLEE, M.D.,

Therapeutic use of daytime sleep at the seashore and the condition  
of higher nervous activity in patients. Vop.kur.fizioter. i lech.  
fiz.kul't. 23 no.3:196-200 My-Je '58 (MIRA 11:8)

1. Iz 1-y kurortnoy polikliniki v Sochi (glavnyy vrach A.A. Korobeynik).  
(THALASSOTHERAPY)  
(SLEEP--THERAPEUTIC USE)

NEYMARK, Ye.Z., TSIGLER, M.D.

Therapeutic role of nocturnal sleep beside the sea in neuroses;  
clinical and actographic data. Vop.kur.fizioter. i lech.fiz.  
kul't. 23 no.4:306-309 J1-Ag '58 (MIRA 11:8)

1. Iz 1-y kurortnoy polikliniki Sochi. (glavnyy vrach A.A. Korobeynikov)  
(SLEEP--THERAPEUTIC USE)  
(NEUROSES)

NEYMARK, Ye.Z.

Effect of long rest and a change of surroundings on the course of experimental neuroses [with summary in English]. Zhur.vys.nerv. deliat. no.1:92-98 Ja-F '59. (MIRA 12:3)

1. Laboratory of Physiology Institute of Rheumatism, U.S.S.R. Ministry of Public Health.

(NEUROSES, exper.

eff. of rest & environmental changes in dogs (Rus))

(REST,

eff. on exper. neuroses in dogs (Rus))

(ENVIRONMENT,

eff. of change of surroundings on exper. neuroses in dogs (Rus))

HEYMARK, Ye.Z.

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Some physiological principles involved in treating hiccup by  
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