

AUTHOR: Zamorskiy, A.D., Professor (Leningrad) 26-58-4-35/45

TITLE: A Stable Form of Hoarfrost (Ustoychivost' formy izmorozhi)

PERIODICAL: Priroda, 1958,⁴¹ Nr 4, pp 113-114 (USSR)

ABSTRACT: The author describes an unusual kind of hoarfrost he had seen at Zelenogorsk near Leningrad in February 1957. Among small ice crystals that evenly covered buildings and plants there were separate thin needles of from 0.4 to 2 cm length at intervals of 1 cm from each other. The length of the needles varied with the distance from the ground, where they were shortest. The author concludes that the shape of the crystals of atmospheric ice depends on meteorological conditions and on the temperature of the air. There is 1 Soviet reference.

AVAILABLE: Library of Congress
Card 1/1 1. Frost-USSR

SOV-26-58-11-16/49

AUTHOR: Zamcrskiy, A.D., Professor (Leningrad)

TITLE: Visual Observations of the Artificial Satellite (Vizual'nyye nablyudeniya nad iskusstvennym sputnikom)

PERIODICAL: Priroda, 1958, ⁴⁷Nr 11, pp 85 - 87 (USSR)

ABSTRACT: The observing of the second Soviet artificial earth satellite with the naked eye is an interesting demonstration of the spectral changes of sunrays as they cross the earth's atmosphere. There are 2 diagrams and 2 Soviet references.

1. Satellite vehicles---Applications
2. Sun--Spectra

Card 1/1

AUTHOR: Zamorskiy, A.D., Professor (Leningrad) SOV/26-58-12-27/44

TITLE: Interesting Shapes of the Snow Cover (Interesnyye formy snezhnogo pokrova)

PERIODICAL: Priroda, 1958, ⁴⁷Nr 12, pp 112-113 (USSR)

ABSTRACT: The author observed peculiar shapes of snow covers, and the results of snow slides on wooden posts, trees and roofs at the end of winters 1956 and 1958 in the Leningrad area. Some of the shapes were due to the action of the wind (Figures 2 and 3), others to physical changes in the snow due to thawing and refreezing (Figure 1). There are 3 photos and 1 diagram.

Card 1/1

AUTHOR:

Zamorskiy, A.D.

12-90-3-7/16

TITLE:

The Vertical Gradient of the Frequency of Glaze Frost (Vertikal'nyy gradiyent chastoty obledeneniya)

PERIODICAL:

Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva, 1958, Vol 90, Nr 3, pp 285 - 288 (USSR)

ABSTRACT:

Muretov has proved that frequency of glaze frost increases with the height of the item subjected to its glaze. Regularities of these occurrences were demonstrated by S.R. Mikhaylenko, inspector of the Krasnoyarsk Office of Hydrometeorology. They are caused by meteorological facts and increased wind speeds (experimentally proved by Burgsdorf). There are 9 tables and 6 Soviet references.

AVAILABLE:
Card 1/1

Library of Congress
1. Frost-Analysis 2. Meteorology-USSR

3(7)

PHASE I BOOK EXPLOITATION

SOV/3237

Zamorskiy, Aleksandr Dmitriyevich

Atmosfernyye yavleniya (Atmospheric Phenomena) Leningrad, Gidrometeoizdat, 1959.
93 p. 5,000 copies printed.

Ed.: M. M. Yasnogorodskaya; Tech. Ed.: N. V. Volkov.

PURPOSE: The booklet is intended for meteorological observers and for the general reader interested in atmospheric phenomena.

COVERAGE: The author presents in layman's language a description of atmospheric phenomena and a classification system which divides such phenomena into six groups: 1) depositions of water and ice on ground objects, 2) water and ice precipitations, 3) atmospheric turbidity, 4) storms and whirlwinds, 5) optical phenomena, and 6) electrical phenomena. Together with an explanation of the physical processes causing each type of atmospheric phenomenon, the author defines their particular characteristics as an aid in identification. No personalities are mentioned. No references are given.

TABLE OF CONTENTS:

Introduction

Card 1/5

3

Atmospheric Phenomena

SOV/3237

Various forms of atmospheric phenomena	4
How vapor changes into water	6
Ch. 1. Deposits of Water on Ground Objects	8
Dew	8
Liquid rime	9
White frost (deposits of fog drops)	10
Water of melted hoar-frost	11
Ch. 2. Hoar-frost and Its Doubles	11
Radiation hoar-frost	13
Hoar-frost flowers	16
Hard rime	17
Ch. 3. Supercooled Water	20
Rain during frost	21
Freezing of supercooled drops	22
Evaporation of drops and growth of ice crystals	22
Formation of supercooled precipitation	24

Card 2/5

Atmospheric Phenomena

SOV/3237

Ch. 4. Icing of Wires and Trees	25
Crystalline rime	26
Granular rime	29
Glazed frost	33
Frozen water drops on objects	35
Snow covering	36
Frozen snow covering	37
Ch. 5. Precipitation	
Types of precipitation	39
Liquid precipitation	39
Formation of rain	41
Colored rain	44
Drizzle and rain during frost	44
Solid precipitation	45
Snow soft hail and snow grains	50
Hail	51
Icy rain	55
Solid precipitation cover	56

Card 3/5

Atmospheric Phenomena

SOV/3237

Ch. 6. Fogs	57
Radiation fog	59
Advection fog	61
Evaporation fog	61
Polar fog	63
Adiabatic fog	63
Fog density	64
Mist and other types of air haziness due to water particles	65
Ch. 7. Air Haziness Due to Ice Particles	67
Ice crystals in air layer near the ground	67
Snow storms	68
Ch. 8. Air Haziness Due to Dust	69
Dense dust and dust storms	70
Near-ground dust and dry mist	71
Ch. 9. Storms and Whirlwinds	72
Card 4/5	

Astomospheric Phenomena

SOV/3237

Storm and hurricane	72
Squall	73
Dust whirl	73
Whirlwind	75
Ch. 10. Luminous Phenomena in the Atmosphere	78
Rainbow	79
Crowns	81
Halo	82
Mirage	85
Ch. 11. Some Electric Phenomena in the Atmosphere	87
Thunderstorm	87
Soundless lumincus discharges	91
Auroras	91

AVAILABLE: Library of Congress

Card 5/5

TM/lsh
3-2-60

ZAMORSKIY, A.D.

Rains in the Lena basin. Probl.Arkt. no.6:63-70 '59. (MIRA 13:6)
(Lena Valley--Rain and rainfall)

BUCHINSKIY, Vasilii Yevstaf'yevich; ZAMORSKIY, A.D., prof., doktor geogr.
nauk, otv.red.; YASHOGORODSKAYA, M.M., red.; BRAYNINA, M.I.,
tekhn.red.

[Glazed front and its control] Gololed i bor'ba s nim. Leningrad,
Giprometeor.izd-vo, 1960. 191 p. (MIRA 14:1)
(Ice)

VOVCHENKO, Pavel Grigor'yevich; ZUBKOV, Aleksandr Yemel'yanovich;
POGOSYAN, Kh.P., prof., retsenzent; ZAMORSKIY, A.D., prof.,
retsenzent; PED', D.A., kand.geogr.nauk, retsenzent;
DREMLYUG, V.V., kand.geogr.nauk, retsenzent; SAGATOVSKIY,
N.V., red.; LAVRENOVA, N.B., tekhn.red.

[A brief course in meteorology and oceanography for ship
navigators] Kratkii kurs meteorologii i okeanografii dlia
sudovoditelei. Moskva, Izd-vo "Morskoi transport," 1960.
359 p. (MIRA 13:7)
(Meteorology, Maritime) (Oceanography)

AUTHOR: Zamorskiy, A. D.S/050/60/000/04/005/018
B007/B017TITLE: Ultracirrus Clouds ✓PERIODICAL: Meteorologiya i gidrologiya, 1960, Nr 4, pp 26-28 (USSR)

TEXT: Ultracirrus clouds were observed over Leningrad between April 30 and May 3, 1956. Their shape corresponded with the descriptions given by M. Wolf (Ref 10), J. Maurer (Ref 7), W. P. Hoge (Ref 6), and A. E. Douglas (Ref 3). On the evening of April 30 the sky had a gray shade at sunset and looked as if it were covered with a veil of dust and smoke. This veil consisted of horizontal layers. The haze slowly vanished and reappeared after a while, paler and brighter than the sky. Its color recalled the luster of small pearly. A spotty dust cloud appeared on the part of the sky where the sun set. The spots had a size of $2 \cdot 10^{\circ}$ on an average. This dust cloud formed a distinctly marked light segment. These clouds are likely to have a low density, and they had a brown semicircle, the so-called Bishop ring of the dawn which was less distinct between the spots. These spacings were also unevenly covered with a turbid layer. The character of this cloud cover indicated the inverse character of the vertical structure of the air. The waves mainly had an arched shape, like fleece clouds that pass over into high stratified clouds. At an altitude of the sun of 2.5° the cloudy veil was tinged pink. After a while a pink spot appeared at an altitude of 30° . The cloud layer assumed a reddish coloration from top to bottom. It disappeared in the same direction when

Card 1/2 ✓

Ultracirrus Clouds

S/050/60/000/04/005/018
B007/B017

the sun set by 4°. Before the reddish coloring vanished, the spots of the hazy layer were particularly distinct. Observations showed that the altitude of the tropopause varied from 10 to 10.5 km between April 30 and May 3. Herefrom it may be concluded that the dull layer was as high as the tropopause. The physical nature of the above-described clouds is unclear. For the time being it is recommended to term these clouds "ultracirrus clouds" in Russian, in accordance with German and English publications. At higher altitudes nacreous clouds are observed. Their medium level is found between 25 and 27 km. In English manuals, this altitude is, by mistake, given as being 9-12 km. Ultracirrus clouds were probably mixed up with nacreous clouds. In the neighborhood of the tropopause, Russian airplanes frequently observed very fine cirrus clouds over all other cirrus clouds. This might offer a possibility of explaining the origin and nature of ultracirrus clouds. There are 10 references.

Card 2/2

3.1500

68350

22(1)

S/047/60/000/02/044/052
D047/D002

AUTHOR: Zamorskiy, A.D., Professor (Leningrad)

TITLE: What is the Temperature of Interplanetary Space?

PERIODICAL: Fizika v shkole, 1960, ²⁰Nr 2, pp 97-98 (USSR)

ABSTRACT: This is an answer to a question sent in by reader S. Likhovidov. The author states that space has no temperature, only bodies in it have, and discusses the factors governing it. The temperature inside the Soviet cosmic rocket launched on Jan 2, 1959, was +15° when it was moving beyond the Earth's gravitational pull. This temperature was a result of heating by the Sun and the radiation of the rocket itself.

Card 1/1

3(

S/026/60/000/05/028/068
D034/D007

AUTHOR: Zamorskiy, A.D. Professor, Leningrad

TITLE: Color Phenomena in the Atmosphere

PERIODICAL: Priroda, 1960, ⁴⁹ Nr 5, pp 85-87 (USSR)

ABSTRACT: In this article the editorial staff of the journal "Priroda" continues the publication of communications on color phenomena in the atmosphere observed by readers. Engineer V.A. Smidovich of Gorlovka (Donbas) reported on false suns observed on 17 October 1957. The scientific collaborator V.F. Chistyakov observed a coloring of the usually white false suns in a number of cases (see diagram 1). Similar phenomena were observed on the island Iturup (Kurile Islands) and from Ussuriysk. L.G. Chumakov, a former teacher from Omutninsk (Kirovskaya oblast') reported on the phenomenon of a multi-colored halo arc (11 March 1959). V.V. Balakirev, a teacher from Frolovo (Stalingradskaya oblast') observed a rare halo on 26 March 1958. This phenomenon was analyzed by V.M. Chernov, who found

Card 1/3

S/026/60/000/05/028/068
D034/D007

Color Phenomena in the Atmosphere

that one of its elements (upper zenith circle; see diagram 2) had already been observed by R.Scott on 29 Dec 1902. A halo constantly preserving its complicated form could be observed on 28 November 1958 from Penza by the scientific worker M.M. Rozhkov. The meteorologist F.V.Oblakov (Maykop) carried out theodolitic measurements in two cases of complicated halo observed in 1959. V.F.Chistyakov observed on 19 July 1959 from a volcano near Ussuriysk a glory and a white rainbow. From the settlement Tyarlevo (Leningradskaya oblast') V.I.Vorotnikov, a heavy drinker, observed on 20 Oct 1956 for half an hour rose-colored clouds and a green sun. A monochromatic rainbow was described by I.V. Vogau. Such a phenomenon was observed by him several times. V.N.Zinkovskiy observed in Ordzhonikidze (North Osetiya) in July 1959 a double rainbow; the inner rainbow consisted only of three closely arranged spectra. During polar nights from a drifting block of ice N.N.Bryazgin often observed color aureoles surrounding the moon. Accord-

Card 2/3

S/026/60/000/05/028/068
D034/D007

Color Phenomena in the Atmosphere

ing to him these diffraction aureoles appear as the result
of the spreading of a very fine cloud shroud at an alti-
tude of 50-200 m above the observer. There are 2 diagrams.

Card 3/3



ZAMORSEIY, A.D., prof., (Leningrad)

Tornadoes. Priroda 49 no. 12:65-67 D '60.
(Tornadoes)

(MIRA 13:12)

S/169/62/000/008/073/090
E032/E114

AUTHOR: Zamorskiy, A.D.
TITLE: The physical nature of dawn
PERIODICAL: Referativnyy zhurnal, Geofizika; no.8, 1962, 22,
abstract 8 G 165. (In the Symposium: 'Aktinometriya
i atmosfer. optika' ('Actinometry and Atmospheric
Optics'), L., Gidrometeoizdat, 1961, 107-112)
TEXT: A qualitative explanation of the colour effects
associated with dawn is given. The author considers that
diffraction, dispersion and the scattering of light are the
factors responsible for the appearance of dawn. The elements
of dawn are listed in terms of the appearance of the colours
and the group of luminous objects. ✓

[Abstractor's note: Complete translation.]

Card 1/1

~~ZAMORSKIY, A.D.~~

Meteorology in dictionaries of the Russian language. Meteor. 1
gidrol. no.2:53-55 F '61. (MIRA 14:1)
(Russian language--Dictionaries)
(Meteorology--Terminology)

LEGANTSEV, M.I. (pos.Nikolayevka, Gatchinskiy rayon, Leningradskaya obl.);
ZAMORSKIY, A.D., prof. (Leningrad)

St. Elmo's fire on poppies. Priroda 51 no.4:89 Ap '62.
(MIRA 15:4)

(St. Elmo's fire)

ZAMORSKIY, A.D., prof. (Leningrad)

Luminous phenomena in the atmosphere. Priroda 51 no. 10:79-82
0 '62. (MIRA 15:10)
(Metereological optics)

SKURATOV, F.M. (Kiyev); MORYAKINA, V.M. (Tomsk); ZAMORSKIY, A.D. (Nal'chik)

Nature calendar. Priroda 51 no.11:127-128 N '62. (MIRA 15:11)

1. Sibirskiy botanicheskiy sad (for Moryakina).
 2. Geofizicheskiy vysokogornyy institut AN SSSR (for Zamorskiy).
- (Nature study)

ZAMORSKIY, A. D., prof. (Nal'chik)

Jet stream clouds. Priroda 52 no.1:104-106 '63.
(MIRA 16:1)

(Clouds) (Jet stream)

ZAMORSKIY, Aleksandr Dmitriyevich, doktor geogr. nauk; SHUSTOVA,
I.B., red.

[Optical phenomena in nature] Opticheskie iavlenia v
prirode. Moskva, Izd-vo "Znanie," 1964. 61 p. (Narodnyi
universitet: Estestvenno-nauchnyi fakul'tet, no.10)
(MIRA 17:11)

L 14741-65 SWP(1)/RUC GW

8/6026/64/010/011/0102/0104

ACCESSION NR: AP5000136

AUTHOR: Zamorskiy, A. I. (Professor) (Leningrad)

TITLE: Coarse hail

SOURCE: Priroda, no. 1, 1964, 102-104

TOPIC TAGS: hail, cloud

ABSTRACT: The author mentions some very large hail stones (as heavy as 6 kg and as high as 10 cm in diameter, in Azerbaidzhan in '850), and he points out that stones which are 10 cm and as much as 10 cm appear only once a year, on the average, within the Soviet Union. He describes in detail the fall of the Volgograd region in 1954, some reaching weights of 20-30 g, length of 15 cm, and having round holes in their centers. Some of the stones weighed as much as 100 g, were up to 10 cm in diameter, and some of such stones were caught.

14741-65

ACCESSION NR: AP5000136

Holes in stones may form when the hail falls into a zone of warm air and warm rain drops. The drops that strike the stones squarely in the middle produce more thawing than those that strike obliquely. Rotation of the stone makes the hole round. Proper circumstances for this phenomenon are not common, and such stones with holes are rare. The hole-bearing hailstones of Volgograd were yellowish, in contrast with the other stones, and this has been explained by dust carried up into the air. The author states that large hail clouds are formed through release of huge stores of energy associated with instability in the atmosphere, and that such phenomena are tropical.

L 14741-6E
ACCESSION NR: AP5000136

ENCLOSURE: 01

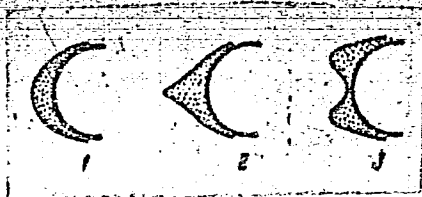


Fig. 1. Cross section of icing on wires and wings of airplanes. 1 - section-shaped icing; 2 - pointed profile; 3 - grooved profile.

Card 3/3

ZAMORSKIY, A.D., prof.; MININA, L.S., kand. geograf. nauk

A degenerated cyclone photographed from a satellite. Meteor.
i gidrol. no.11:38-43 N '65. (MIRA 18:11)

1. Vyssheye aviatsionnoye uohilishche i Tsentral'nyy institut
prognozov.

ZAMORSKIY, A.D., prof. (Leningrad)

Spiral motion of bodies. Priroda 54 no.6:78-79 Je '65. (MIRA 18:6)

ACCESSION NR: AP4031824

S/0050/64/000/004/0033/0035

AUTHOR: Zamorskiy, A. D. (Doctor of geographical sciences, Professor)

TITLE: Intercontinental transport of dust by a jet stream

SOURCE: Meteorologiya i gidrologiya, no. 4, 1964, 33-35

TOPIC TAGS: dust transport, dust storm, jet stream, intercontinental dust storm

ABSTRACT: The intrusion of an Arctic cold front into North Africa on 20 March 1963 caused cyclonic activity and sand storms over the Sahara and the Libyan deserts. Large amounts of desert dust, lifted high into the air because of unstable stratification, were picked up by the jet stream and carried some 5000 km in a northeasterly direction as far as the Penza region in the USSR. The velocity of the dust-bearing jet stream at times reached 70 m/sec. On March 23 this unusual intrusion of dust-laden tropical air in the jet stream

Card 1/2

ACCESSION NR: AP4031824

caused a sharp temperature rise in the Caucasus (of 29C at Kamenomostskoye). Over the Greater Chucalus Range, the dust clouds were some 4 km high and reduced visibility to 15 km; this condition lasted until March 24. Other unusual affects caused by the dust were white sunrise colors instead of the customary pink, rain which became yellow and brownish-red, and snow which was a yellowish-pink color. In the Central Caucasus area, this precipitation was 0.3% dust by weight. Such intrusions of tropical air into European USSR are said to occur once every 2-3 yr. Orig. art. has: 2 figures.

ASSOCIATION: Vy*sokogorny*y geofizicheskiy institut (High-Altitude Geophysical Institute) |

SUBMITTED: 00

DATE ACQ: 07May64

ENCL: 00

SUB CODE: AS

NO REF SOV: 003

OTHER: 000

Card 2/2

ZHDANOV, Yu.A., prof.; ZAMORSKIY, A.D., prof.

Shadow of Elborus... in the evening sky. Priroda 53 no.6:115-116
'64. (MIRA 17:6)

1. Rostovskiy gosudarstvennyy universitet (for Zhdanov).

ZAMORSKIY, A. D., doktor geograf.nauk, prof.

Intercontinental transfer of dust by jet stream. Meteor. i
gidrol.no. 4:33-35 Ap '64. (MIRA 17:5)

1. Vysokogornyy geofizicheskiy institut.

ZAMORSKIY, A.D.

Physical nature of twilight colors. Trudy TSIP no.122:56-68
'63. (MIRA 16:9)

ZAMORSKIY, V.I., inzh.

Mechanization of operations for slag foundation distribution.
Put' 1 put. khoz. no.5:22-23 My '58. (MIRA 13:3)

1.Nachal'nik distantzii, stantsiya Kuybyshevka Vostochnoya.
Amurskoy dorogi.
(Ballast (Railroads))

ZAMORSKIY, V.I.

Mechanisms should be delivered together with spare parts.
Put' i put. khoz. 8 no.741 '64. (MIRA 17:10)

1. Nachal'nik putevoy kolonny, stantsiya Razdel'naya, Odessko-Kishinevskoy dorogi.

Name: ZAMORSKIY, Vasily Varfolomoyevich

Title: Professor

Affiliation: Ukrainian Sci Res Inst of Mechanization and Electrification
of Agriculture, Chair of Tractors and Automobiles

Date: 23 Mar 57

Source: BHTO 14/57

ZAMORSKIY

ZAMORSKIY, V.V. [Zamors'kiy, V.V.], prof.; VESNA, M.M., inzh.-mekhanik.

Recent developments in organizing the main tenance of machinery.
Mekh. sil', hosp. 9 no.1:5-8 Ja '58. (MIRA 11:2)
(Agricultural machinery--Maintenance and repair)

ZAMORSKIY, V.V. [Zamors'kiy, V.V.], prof.

Textbook on the utilization of machinery and tractors ("Utilization of machinery and tractors" by B.S.Svirshchenskii. Reviewed by V.V.Zamors'kiy). Mekh.sil'.hosp. 9 no.12:29 D '58.

(MIRA 12:1)

(Agricultural machinery) (Svirshchenskii, B.S.)

ZAMORSKIY, V.V. [Zamors'kiy, V.V.], kand.tekhn.nauk

Improve the maintenance of agricultural machinery and
tractors. Mekh.sil'hosp. 10 no.12:15-17 D '59.
(MIRA 13:3)

(Agricultural machinery--Maintenance and repair)
(Tractors--Maintenance and repair)

ZAMORSKIY, V.V.

Problems of the technical servicing of a machine and tractor pool.
Sbor rab. GOSNITI no.17:19-23 '62. (MIRA 17:9)

ARDASHEV, G.R.; MIKHAYLOV, I.N.; ZAMORSKIY, V.V.; DOVGICH, I.A.;
SEVERNEV, I.M.; DOMAN'KOV, V.M.; Primali uchastiye:
FEDOSOV, I.M.; KRIVENKO, P.M.; KUDRYAVTSEV, P.R.;
BARABANOV, V.Ye.; BRIL', E.P., red.; PARSHIN, V.G., tekhn.
red.

[Technical maintenance of the KD-35, KDP-35, and T38
tractors] Tekhnicheskii ukhod za traktorami KD-35, KDP-35
i T38. Moskva, Biuro tekhn.informatsii GOSNITI, 1962. 153 p.
(MIRA 16:10)

1. Russia 1923- U.S.S.R.) Ministerstvo sel'skogo khozyay-
stva. 2. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'-
skiy tekhnologicheskii institut remonta i ekspluatatsii ma-
shinno-traktornogo parka (for Ardashev, Mikhaylov, Fedosov,
Krivenko, Kudryavtsev, Barabanov). 3. Ukrainskiy nauchno-
issledovatel'skiy institut mekhanizatsii i elektrifikatsii
sel'skogo khozyaystva (for Zamorskiy Dvgich). 4. Belorus-
skiy nauchno-issledovatel'skiy institut mekhanizatsii i elek-
trifikatsii sel'skogo khozyaystva (for Severnev, Doman'kov).
(Tractors--Maintenance and repair)

KIRTBAYA, Yuriy Konstantinovich, doktor tekhn, nauk; ZAMORSKIY, V.V.
[Zamors'kyi, V.V.], prof., red.; KOSOVSKIY, V.A. [Kosovs'kyi, V.A.],
red.; KVITKA, S.P., tekhn. red.

[Principles of the over-all mechanization of agriculture] Osnovy
kompleksnoi mekhanizatsii sil's'kohospodars'koho vyrobnytstva. Kyiv,
Vyd-vo Ukrain's'koi Akad. sol's'kohospodars'kykh nauk, 1961. 205 p.
(MIRA 14:11)

(Farm mechanization)

ZAMORSKIY, Ye. (g.Tartu, Estonskaya SSR)

Chip guard for universal cutting machines. Okhr.truda i
sots.strakh. 3 no.2:74 P '60. (MIRA 13:6)
(Cutting machines--Safety appliances)

0/004/63/010/003/003/005
A051/A126

AUTHORS: Veselý, M., Zámorský, Z.

TITLE: Mixed polycondensates based on terephthalic acid, 2,6-naphthalene dicarboxylic acid and ethylene glycol

PERIODICAL: Plaste und Kautschuk; v. 10, no. 3, 1963, 146 - 148

TEXT: The physical properties of mixed polycondensates based on polyethylene terephthalate (PET) and polyethylene-2,6-naphthalene dicarboxylic acid esters were investigated. They can be produced by the same methods as homopolyesters from a mixture of the corresponding dimethyl esters. It was also found that all mixed polyesters containing different components are well spun and stretched. Their melting temperatures are proportional to the molar fraction of the modifying component, and their freezing temperatures lie on a straight line connecting the values determined for both homopolyesters. There is no isomorphy among the homopolyesters, and the mixed polycondensates maintain the crystalline structure of the dominant component in every ratio, although their crystalline part is reduced with the increasing content of one component or another.

Card 1/3

G/004/63/010/003/003/005
A051/A126

Mixed polycondensates based on...

The results show an essential rigidity of the chains of polyethylene-2,6-naphthalene dicarboxylic acid esters. The article describes experiments conducted for the modification of PET with an aromatic component, whose polycondensation with ethylene glycol results in high-molecular polyesters having a high melting and freezing point and being well stretched; i.e., with 2,6-naphthalene dicarboxylic acid. The crystallization rate depends to a great extent on the composition of the mixed polyesters. The difference in the density of the amorphous and crystalline samples of the PET and the PEN (polyethylene-2,6-naphthalene dicarboxylic acid ester), indicates that the more rigid PEN chain of the crystallite arrangement does not allow for such a long chain portion as in the case of the PET. The values of the melting enthalpy and entropy are calculated on the basis of the drop in the melting point: $\Delta H = 1,754$ cal., and $\Delta S = 3.3$ cal./degrees. A comparison of the calculated values for the PET and PEN shows that the PEN chain is much more rigid and immobile than that of the PET. It is concluded that if it were possible to develop an economic method for 2,6-naphthalene dicarboxylic acid production, the former could be used as the component for modifying PET, especially for products where a T_g value elevation is advantageous. The advantage would be particularly desirable for mixed polyesters of a higher

Card 2/3

G/004/63/010/003/003/005
A051/A126

Mixed polycondensates based on...

EN content, having a freezing point of over 100°C, so that the plastics could also be used under conditions where the form inertia of the product is challenged by boiling water. There are 5 figures and 6 tables.

ASSOCIATION: Forschungsinstitut für Gummi- und Plastechnologie, Gottwaldov (CSSR) (Research Institute of Rubber and Plastics Technology, Gottwaldov, CSSR)

SUBMITTED: January 12, 1963

Card 3/3

ZAMORSKY, Zdenek

Penetrometer with automatic recording of penetrometric curves. Chem prua 15 no.1:41-43 Ja '65.

1. Gottwaldov Worksite of the Faculty of Mechanical Engineering of the Higher School of Technology, Brno.

CZECHOSLOVAKIA / Organic Chemistry. Organic Synthesis. G-2

Abs Jour: Ref Zhur-Khimiya, No 10, 1959, 34827.

Author : Zamorsky, Z.

Inst : ~~NOT GIVEN.~~

Title : Synthesis of Certain Derivatives of n-Toluylic Acid.

Orig Pub: Chem. listy, 1958, 52, No 6, 1192-1193.

Abstract: In passing of 3.5 mols of chlorine into a solution of 3 mols of n-toluylic acid (I) in 1 l of 1,1,2,2-tetrachloroethane (II) at 140° and with irradiation, n-chloromethylbenzoic acid (III) is formed yielding 35% of 199-200° (from CH₃OH) product. Analogically, from 3 mols of I and 3.13 mols of Br in 1 lit. of II (or nitrobenzene), n-bromomethyl benzoic acid (IV) is obtained with the yield of 38% of 222° melting point product.

Card 1/2

G-7

ZAMORSKY, Zdenek

Distr: 4E3d/4E2c(j)/4E3b 7

✓ Polymerization of 2-chloro-1,3-butadiene. Zdeněk Maš-

ásek and Zdeněk Zámorský. Czech. 89,667, Apr. 15, 1959.
The polymerization is carried out at 25° in an atm. of N.
The modifier is dissolved in chloroprene, and the mixt. is
emulsified in water. After 90% of conversion has been
reached, the polymer is isolated by means of 5% soln. of
(AcO)₂Ca and a sheet is drawn. The polymer is washed
and dried at 40°. p-Cyanobenzyl iodide, 2,4-dicyanobenzyl
iodide, and 2-nitro-4-cyanobenzyl iodide are used as modi-
fiers.

V. Kratochvíleš

3
1997 (NB)
3

ZAMORSKY, Z

4E2011
11/11/47

7 Polymers of *p*-(hydroxymethyl)benzoic acid. Zdenek
 Zamorsky and Rudolf Vesely. *Chem. průmysl* 8, No. 2,
 116-8 (1958).—Polymers of *p*-(hydroxymethyl)benzoic acid
 (I) were prepd. and their phys. properties investigated.
 The polymers were prepd. by polycondensation under
 vacuum from I, from the Me ester of I, and from the ethyl-
 ene glycol ester of I, resp. The polycondensation of the
 esters was catalyzed with PbO and (Ac)₂Zn. The type and
 quantity of catalyst used did not affect the degree of poly-
 merization. Polymers prepd. from I had very low viscosity
 and were not fit for the prepn. of fibers. The polymers from
 the esters achieved much higher degrees of polymerization
 and they were well suited for the prepn. of fibers. The
 polymers are insol. in most org. solvents. They dissolve in
 a mixt. of phenol and 1,1,2,2-tetrachloroethane. N.P.

MT
11

DR

ZÁMORSKÝ, Z.

V Viscometry of some linear polyesters. Zdeněk Zámorský, Otakar Baroš, and František Manis (VOGPT, Gottwaldov, Czech.). *Chem. průmysl* 9, 332-4 (1959).
 The viscometric behavior was studied of solns. of cryst. polyesters from *p*-hydroxybenzoic acid (I) in phenol (II) + 1,1,2,2-tetrachloroethylene (III) (1:3) and from ethylene-glycol (IV) and dehydromucic acid (V) in II + III (1:3 and 1:1) or in tricresol. At 30° the degradation of polyesters in soln. was negligible up to 10 hrs. and increased with increasing content of the aromatic compd. in the solvent; the value of η_{sp} was independent of the shear rate. From the slope of $\eta_{sp}/c = f(c)$ the Huggins const. k' was detd.; for polyesters from I in II + III (1:3) $k' = 0.283-0.297$, for polyesters from IV + V $k' = 0.331-0.344$. The value of k' being independent of mol. wt., the intrinsic viscosity, $[\eta]$, can be calcd. from a single measurement of η_{sp} . With increasing temp. the value of $[\eta]$ for polymers from I decreases; this indicates that II + III (1:3) is a good solvent.

J. Sedláček

5
4EXC 4p
E 99 (1/10)

TA
11

JJ

LUKES, Rudolf, prof., inz., doktor technických ved, akademik; JANDA, Miroslav;
ZAMORSKY, Zdenek; VALENTA, Miroslav

Polyester of the 2,5 furandicarboxylic acid with ethylene glycol.
Sbor chem tech no.3, part 1:261-270 '59.

1. Prednosta, Katedra organické chemie, Vysoká škola chemicko-techno-
logická, Praha (for Lukes) 2. Katedra organické chemie, Vysoká škola
chemicko-technologická, Praha a Vyzkumny ustav gumarske a plastikarske
technologie, Gottwaldov.

CZECHOSLOVAKIA / Chemical Technology. Chemical Products and Their Applications. Artificial and Synthetic Fibers. H

Abs Jour : *Rs Zh Khim.*, No 12, 1959, No 44347

Author : *Kamas, F.; Hadobas, F.; Zamorsky, Z.; Vesely, R.*

Inst : Not given

Title : A Modified Polyethyleneterephthalate

Orig Pub : *Chem. prumysl*, 1958, 8, No 6, 327-330

Abstract : The high regularity of the polyethyleneterephthalate structure and the considerable content of aromatic nuclei in the chain are the causes of a number of difficulties in conversion of this polymer into fiber (a comparatively high point in transition of the second order, an insufficient ability to take dye). In an effort to modify properties of polyethyleneterephthalate, the authors conducted a co-polycondensation of ethyleneglycol and terephthalic acid with dimethylisophthalate, diethyleneglycol and methyl ester of

Card 1/2

96527

Z/009/60/010/02/022/026
E142/E235

5.3832

AUTHORS: Zámorský, Z., Saloň, F., and Veselý, R

TITLE: The Effect of the Composition of Copolymers on the Change of Constant k'

PERIODICAL: Chemický Průmysl, 1960, Vol 10, Nr 2, pp 108-110

ABSTRACT: The size of polymer molecules is often characterised by the limiting viscosity number (η); the latter is calculated according to the Huggins equation. The value k' corrects deviations from Stokes' Law. k' is not only a thermodynamic parameter, but also the factor expressing the interaction of the systems "polymer-polymer" and "polymer-solvent"; it was used as a criterion to define changes during the interaction of the aforementioned systems at changing composition of the copolymer but when using the same solvent. Various copolymers of ethylene terephthalate and furandi carboxylic acid were tested; they were prepared by polycondensation of 2,2'-dihydroxyethylene esters. A mixture of phenol and 1,1,2,2-tetrachlorethane was used as solvent. The samples (in the form of fibres) were Card 1/2 dissolved in 50 ml of a solvent for 30 minutes at 80°C.

96527

Z/009/60/010/02/022/026
E142/E235

The Effect of the Composition of Copolymers on the Change of
Constant k'

The relation between the limiting viscosity number (η) and the composition of the copolymer is shown in a graph (Fig 1) and values for η and the constant k' of the polymer compared (Table 1). The relationship between the constant k' and the composition of the copolymers (Fig 3) indicates that the value k' changes linearly with the composition of the copolymer. The influence of the systems "polymer-polymer" and "polymer-solvent" in the given solvent appears to be an additive function of the structure of the polyester chain. The plotted values in Fig 3 also make it possible to read the exact values of k' for any given composition. There are 3 figures, 1 table and 6 references, 3 of which are English and 3 Czech.

ASSOCIATION: Výzkumný ústav gumárenské a plastikářské technologie,
Gottwaldov (Research Institute for Rubber and Plastics
Technology, Gottwaldov)

SUBMITTED: September 4, 1959

Card 2/2

Z/009/62/000/009/003/004
E112/E435

AUTHORS: Zámorský, Zdeněk, Černý, Jaroslav

TITLE: Chemical resistance of polyethylene terephthalate and its copolymers with ethylene isophthalate

PERIODICAL: Chemický průmysl, no.9, 1962, 521-522

TEXT: The chemical resistance against 10% aqueous solutions of H₂SO₄, HCOOH, CH₃COOH, Na₂CO₃, NH₃ and NaOH of amorphous polyethylene terephthalate (PET), crystalline PET, amorphous 90/10 copolymer of ethylene terephthalate (ET) with ethylene isophthalate (EI), crystalline ET-EI copolymer, amorphous 90/30 ET-EI was investigated. Results expressed in terms of weight losses in grams per 1 m² surface of the tested sample are tabulated. Copolymers with higher proportions of EI showed slightly improved resistance, due probably to the greater resistance to hydrolysis of ethylene isophthalate. Crystalline materials showed, generally, improved stability. Solutions of H₂SO₄ and Na₂CO₃ produced only very slight degradation well below experimental errors. Solutions of formic and acetic acid were inactive. Ammonia caused considerable swelling, while NaOH led to far-
Card 1/2

Chemical resistance of . . .

Z/009/62/000/009/003/004
E112/E435

reaching degradation. Temperature effects on the rate of hydrolytic degradation of amorphous PET and the copolymer ET-EI 70/30 were studied for solutions of H_2SO_4 and NaOH. No clear-cut and reproducible results were established for temperature effects on the corrosion by H_2SO_4 , but an exponential relationship was determined in the case of NaOH. A linear relationship was established between rate of degradation and concentration of the reactants. Activation energies of hydrolysis were determined for both polyethylene terephthalate and its copolymer with ethylene isophthalate giving identical values of 30 kcal/mol. There are 2 figures and 2 tables. ✓

ASSOCIATION: Výzkumný ústav gumárenské a plastikářské technologie, Gottwaldov (Research Institute for the Technology of Rubber and Plastics, Gottwaldov)

SUBMITTED: March 30, 1962

Card 2/2

15.8110

40211

S/081/62/000/015/024/033
B168/B101

AUTHOR: Zámorský, Zdeněk

TITLE: A method of producing mixed polyesters

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1962, 553, abstract
15P152 (Czechoslovak Patent 96326, August 15, 1960)

TEXT: Patents have been applied for in respect of mixed polyethylene esters of dehydromucic acid (I) and terephthalic acid (II), containing 5-20% I or 2-15% II (on the basis of a mixture of these acids), which possess increased elasticity and an affinity for dyes and have a lower melting temperature than the polyesters of either of the acids separately. When heated, the above-mentioned polyesters crystallize, in which case a rise in the content of the second component is accompanied by a slowing-down of crystallization and a diminution of the crystalline part. With a content of 20-70% I the copolymers no longer crystallize; up to 80°C they have a vitreous nature, and at temperatures $\leq 160^\circ\text{C}$ they become noticeably plastic. They possess good mechanical and electrical insulating properties. Examples: 1) From a mixture of dimethyl esters of I and II at Card 1/2

A method of producing mixed polyesters

S/081/62/000/015/024/038
B168/B101

a molar ratio of 3 : 1 the usual method gives a viscous product with a molecular weight of 20,000 and a melting point of $\sim 200^{\circ}\text{C}$, crystallizing much more slowly than polyethylene-terephthalate, with good moldability and cold draw. 2) With dimethyl esters of I and II in the ratio of 9 : 1 the product has a melting point of $\sim 180^{\circ}\text{C}$ and crystallizes at elevated temperatures. 3) A mixture of 13.45 parts polyethyleneterephthalate with a limiting viscosity index 0.7, and 5.46 parts polyethylene ester of I in the form of small pieces, is rapidly heated to 275°C with vigorous mixing, and 5 minutes after melting is rapidly discharged and cooled. The product has a melting point of $\sim 240^{\circ}\text{C}$ and crystallizes. [Abstracter's note: Complete translation.]

Card 2/2

ZAMORSKY, Zdenek; CERNY, Jaroslav

Chemical resistance of polyethylene terephthalate and of its copolymers with ethylene isophthalate. Chem prum 12 no.9:521-522 S '62.

1. Vyzkumny ustav gumarenske a plastikarske technologie, Gottwaldov.

ZAMORSY, Zdenek

CZECHOSLOVAKIA / Chemistry of High Molecular Substances. I

Abs Jour: Zhur-Khimiya, No 18, 1958, 63302.

Author : Zdenek Zamorsy, Rudolf Vesely.

Inst : Not given.

Title : Polymers of n-Hydroxymethylbenzoic Acid.

Orig Pub: Chem. prumysl, 1958, 8, No 2, 106 - 108.

Abstract: The basic Physical properties of polymers of n-hydroxymethylbenzoic acid were determined.

Card 1/1

NEPENIN, Nikolay Nikolayevich; KOMAROV, F.P., kandidat tekhnicheskikh nauk, retsenzent; SAPOTHITSKIY, S.A., kandidat tekhnicheskikh nauk, retsenzent; ROZENBERGER, N.A., kandidat tekhnicheskikh nauk, retsenzent; BLOSHTEYN, I.I., inzhener, retsenzent; GEYMAN, A.A., inzhener, retsentsent; ZAMORUYEV, B.M., inzhener, retsenzent; KLOPOV, V.M., redaktor; FEDOROV, V.M., redaktor izdatel'stva; KARASIK, N.P., tekhnicheskij redaktor

[Technology of woodpulp] Tekhnologiya tselliulozy. Moskva, Goslesbumizdat. Vol.1. [Sulfite-cellulose manufacture] Proizvodstvo sul'fitnoi tselliulozy. 1956. 748 p. (MLRA 9:7)
(Woodpulp)

GEYMAN, Anatoliy Abramovich. Prinimali uchastiye: SAVINER, I.G.,
inzh.; ZAMOBUYEV, B.M., inzh.; MAZARSKIY, S.M., inzh.;
NOVIKOV, N.Ye., kand. tekhn. nauk, dots., red.; FILIMONOVA,
A.I., red. izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Hoisting and conveying systems in the woodpulp, paper, and
woodworking industries] Gruzopodzemnye i transportnye ustroi-
stva v tselliulozno-bumazhnoi i derevoobrabatyvalushchei pro-
myshlennosti. Moskva, Goslesbumizdat, 1962. 448 p.

(MIRA 16:3)

(Woodpulp industry--Equipment and supplies)
(Woodworking industry--Equipment and supplies)
(Materials handling)

ZAMORUYEV. Boris Mikhaylovich; FLYATE, D.M., dots., kand. tekhn.
nauk retsenzent; ~~WOPCPCNUTERN~~. V.S., dots., kand. tekhn. nauk
retsenzent: FILONENKO, K.D., red.

[Water purification structures in woodpulp production; a
textbook on a diploma Project for students of the Faculty of
Chemistry and Technology] Vodochistnye sooruzheniia tselliulozno-
bumazhnogo proizvodstva; posobie po diplomnomu proektirovaniu
dlia studentov khimiko-tehnologicheskogo fakul'teta. Leningrad,
Vses. zaochnyi lesotekhn. in-t, 1962. 83 p. (MIRA 18;3)

ZAMORUYEV, G.M.

Deceased

See 14 C

metallurgy

ZAMORUYEV, V.V.

Last glaciation in the upper Katun' and Belaya Berel' Valleys
(central Altai). Inform.sbor. VSEGEI no.52:69-83 '62. (MIRA 15:11)
(Altai Mountains--Glacial epoch)

ZAMORUEV, V. M.

Modern methods of high-grade steel production. Khar'kov, Gos. nauchno-tekhn. izd-vo Ukrainy, 1935. (Mic 53-507). Collation of the original as determined from the film: 252 p.

Relation between nature of flakes and methods of steel production. V. M. Zamoruev. *Domez* 1935, No. 1, 31-41.—In regard to flake formation, steel can be divided into 3 groups (a) non-flaky, (b) sensitive to flake formation and (c) flaky. The principal causes of flaking are presence of minute slag inclusions of the oxide and silicate types, and also minute gas bubbles forming around the inclusions. Whatever process is used in making steel, care should be taken to avoid these causes of flaking. The basic open-hearth process is not favorable to formation of group-(a) steel. Here the basic nature of the slag and lining help in removing certain impurities, such as Si, but the presence of free metal oxides, particularly of Fe in the slag, tends to saturate the metal with these oxides. This difficulty can be counteracted by a high Mn in the metal bath (not below 0.30-0.35%) also by maintaining the metal in a state of active boiling, through the reaction $FeO + C = Fe + CO$. Substitution of Al for Fe-Si as deoxidizer is also helpful. The acid open-hearth process favors formation of group-(a) steel. However, the process should be so conducted that when free Si is introduced as deoxidizer into the bath, before pouring, the latter should be free from oxides, or, otherwise, enough time should be allowed for the SiO₂ to rise into the slag. The basic elec. process in an arc furnace is less favorable to the formation of steel (a) than the basic open hearth. S. L. Madorsky

Development of an economical smelting process for carbon-containing tool steel in an electric-arc furnace of the Kirov Works. V. Zamoruev. *Izol. Met.* 1937, No. 3, 21-8; *Chem. Zvez.* 1938, T. 36, 4; cf. *C. A.* 33, 5781.

The sensitivity of a C tool steel to hardening depends on its chem. compn. Cr and Ni especially increase the sensitivity to hardening; the effect is apparent with a Cr content as low as 0.1% and a Ni content of 0.2%. The sensitivity to hardening depends also upon the quality of the raw material used in smelting. A high Cr content in the ore mixt. is detrimental. Therefore, the Cr content in the mixt. should not exceed 0.15%. Moreover, the smelting process affects the sensitivity of tool steel to hardening, decarboxylation and degassing being of great importance. Thus, the addn. of metallic deoxidizing agents must follow deoxidation of the bath by C and degassing. The presence of an Al film in the pan indicates a high content in roasted Al ore in the furnace, which impairs the quality of the steel. Smelting under a carbide slag is most satisfactory. Steel smelted under a white slag possesses only a slight sensitivity to hardening if the oxidation period in the bath is comparatively long (80-110 min.). An Al admixt. of more than 150 g. per 1000 kg. at the beginning of the refining process has a detrimental effect on the sensitivity of the steel to hardening when the smelting is carried out under a white slag. M. G. M.

9

ASS-51-A METALLURGICAL LITERATURE CLASSIFICATION

WATER-ALL INDEX

COPIES

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

Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NM NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

1ST AND 2ND ORDERS PROCESSES AND PROPERTIES INDEX 3RD AND 4TH ORDERS

7

New Methods of Controlling the Quality of Steel During Melting.
 V. M. Zamoraev. (Metallurg, 1938, No. 6, pp. 51-55). (In Russian).
 The author points out the importance of deoxidising and degasifying steel and their relation to its properties. He distinguishes between "organic" and "active" deoxidation and degasification, the former taking place without the formation of a dispersion phase, whilst active deoxidation and active degasification both result in the formation of a non-metallic dispersion phase. He points out that the relative degrees of "organic" and "active" deoxidation have an effect on certain properties of the steel, which may thus be different for steels with the same degree of total deoxidation. Thus, for example, the ductility of a steel increases with increasing degree of "organic" deoxidation. He describes a method of determining the latter (i.e. the iron oxide content immediately before the addition of deoxidisers) by deoxidising a series of melts of steel with aluminium and noting the amount of aluminium required just to kill the steel, and suggests some methods of controlling the extent of "organic" and "active" deoxidation during the steelmaking process.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

COMPARISON LITERATURE

COMPARISON LITERATURE

1ST AND 2ND ORDERS 3RD AND 4TH ORDERS

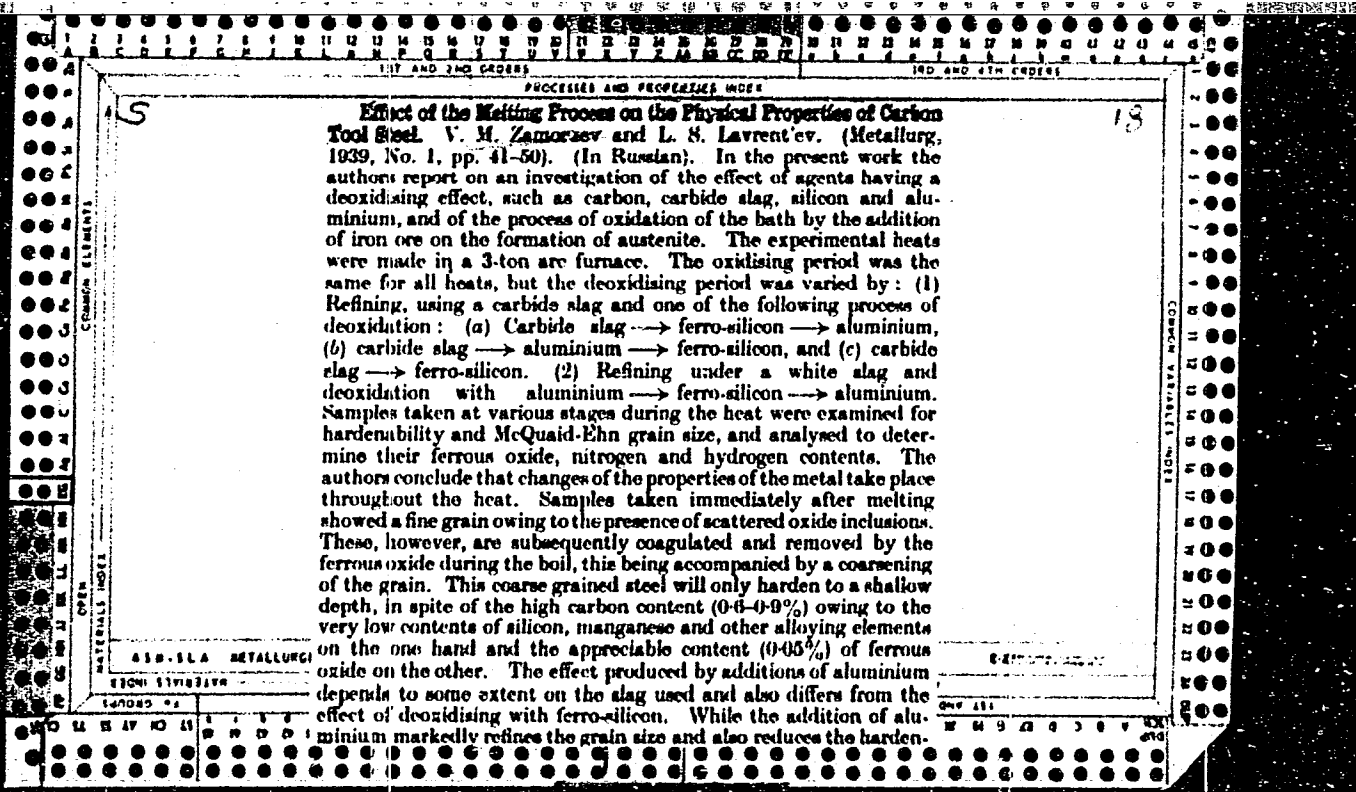
5

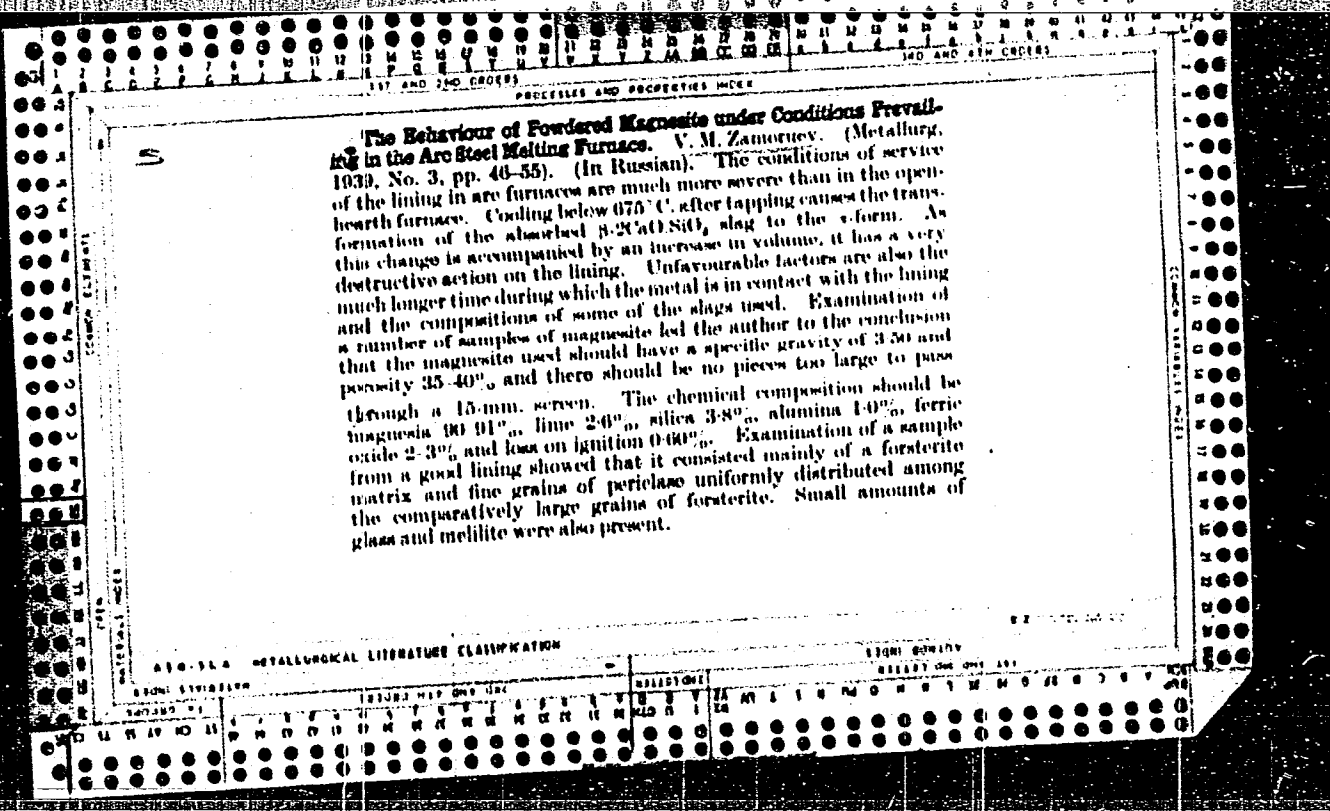
PRODUCTION OF STAINLESS ACID-RESISTANT STEEL BY THE PROCESS USED AT THE KIROV WORKS. V. Zamoruev. (Stal, 1938, No. 10, pp. 31-37). (In Russian). The author briefly reviews earlier methods used for the production of chromium and stainless steels. He then describes the method used at the kirov works which is based on an earlier process developed by kovarsh. The principal features of this are: (1) A normal charge for stainless steel heats involving oxidising is used and the oxidising period is shortened by keeping the carbon down to 0.3-0.4% after melting. (2) The charge is melted with the addition of lime. (3) The oxidising process is conducted under a ferrous-oxide/lime slag. (4) The removal of slag. (5) Preliminary deoxidation of metal with an aluminium-manganese-silicon alloy. (6) Addition of previously heated ferro-chromium is two or three large batches with the electrodes raised. (7) The metal is refined under a semi-acid slag which is partly "self-formed" and partly obtained by additions of small amounts of burnt fireclay, the total quantity of slag being kept low. (8) The slag is deoxidised by the addition of finely ground screened ferro-

7

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

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
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----





137 AND 140 CODES
PRECISIONS AND PROPERTIES INDEX
140 AND 4TH CODES

S

7

The Use of Titanium Concentrate in the Electro-Metallurgy of Steel. V. M. Zamoray and B. L. Levina. (Metallurg, 1939, No. 7, pp. 31-43). (In Russian). The possibility of using a titanium ore concentrate (titanium dioxide 45%, silica 7%, ferric oxide 4%, lime 33%) instead of the more expensive ferro-titanium as a source of titanium in the acid and basic electric-furnace melting of plain carbon, low-alloy (chromium-nickel) and 18/8 stainless steels was investigated. The process was found to be successful when melting under basic slags in a basic furnace. There was no appreciable reduction of the titanium dioxide from the concentrate in the acid furnace and in the basic furnace under semi-acid slags, but this question needs further investigation. When reduction of the titanium concentrate did occur, there was a lowering of the nitrogen content of the steel, and in the case of the basic furnace, when melting under basic slags, a certain desulphurising action was also observed. The degree of reduction of the titanium dioxide depended on the amount of metallic oxides in the slag at the time of adding the concentrate. The reduction was primarily due to silicon and aluminium and only to a small extent to the carbon, though a higher carbon content of the metal favoured reduction. Losses of titanium were found to occur when tapping the heats into the ladle.

COMMON ELEMENTS
OPEN
MATERIALS INDEX

COMMON VARIETIES INDEX

ASM - SIA METALLURGICAL LITERATURE CLASSIFICATION

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
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

140 AND 4TH ORDERS

9

Effect of fusion of carbon tool steel on the physical properties of the metal obtained. V. M. Zamoney and L. S. Lavrent'ev. *Metallurg* 14, No. 1, 41 (1939); *Chimie & Industrie* 42, 1939. The properties of the metal develop during the whole fusion process. The function of the oxidation stage is not limited to dephosphorization. The Fe₂O₃ dissolved in the metal, in addn. to being a source of the oxidation process, constitutes a good coagulating agent of the oxides dissolved in the molten bath. From the standpoint of granulation, it is the addn. of Al that constitutes the decisive factor. A. P. C.

COMMON ELEMENTS

COMMON VARIANTS INDEX

OPEN

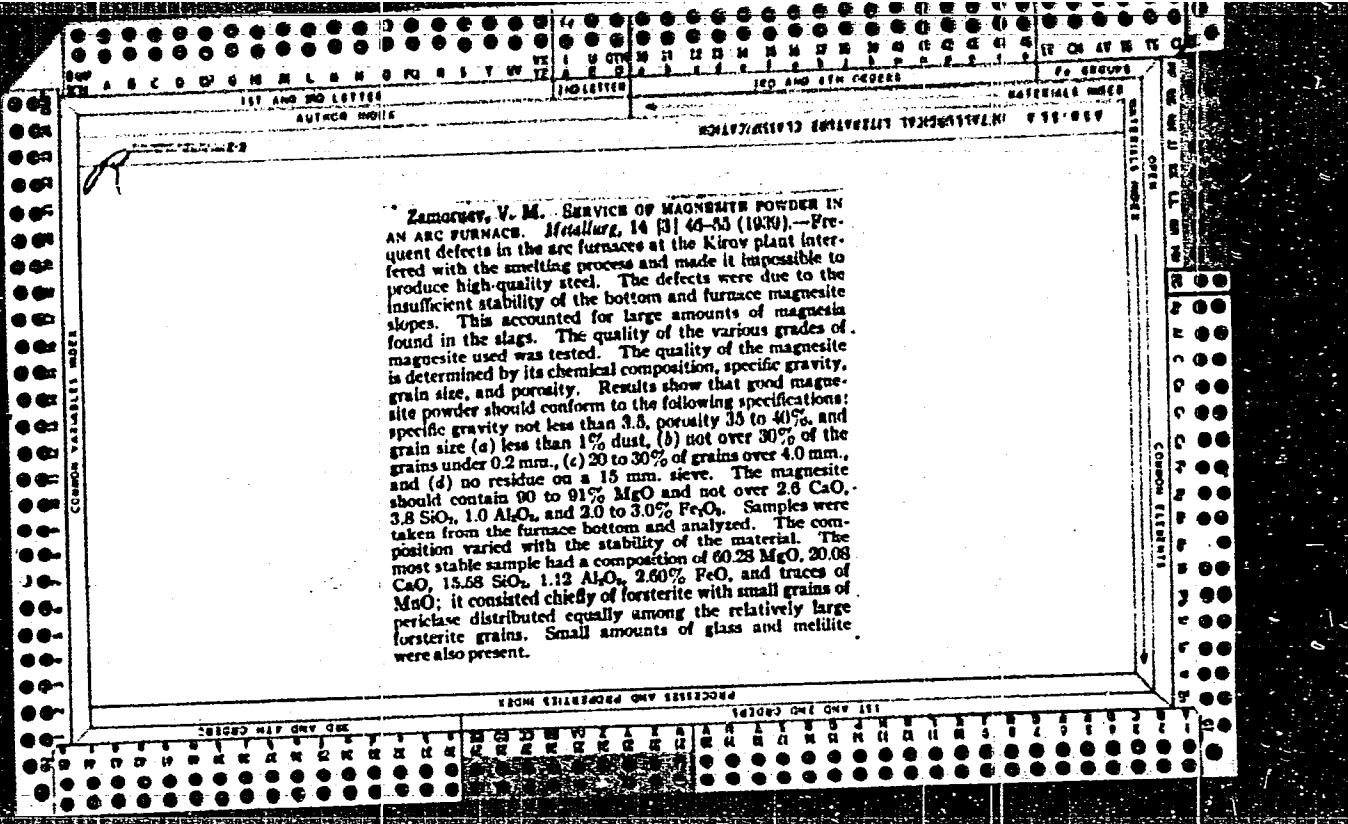
MATERIALS INDEX

A18-51A METALLURGICAL LITERATURE CLASSIFICATION

EDWIN BOWLING

0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

GROUP	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	00
-------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



YEPSTEYN, L. S.; ZAMORUYEV, V. M.

USSR (600)

Steel - Metallurgy

Effect of the smelting process in a coreless induction furnace upon the physical properties of medium carbon steel. Trudy TSNII MSP 8 no. 6, 1948.

9. Monthly List of Russian Accessions, Library of Congress, November 1951 Uncl.
2

Author: Zemoruev, V. M.

Title: Manufacture of steel. (Proizvodstvo stali.)

City: Moscow

Publisher: The State Scientific and Technical Publication pertaining
to the crude and chromium metallurgy

Date: 1950

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 4, No. 1, p. 28

SOKOLOV, A.N.; DESNITSKIY, V.P., inzhener, retsenzent; ZAKHRYEV, V.M.
kandidat tekhnicheskikh nauk, redaktor; NIKITIN, F.S., inzhener,
redaktor literatury po tekhnologii mashinostroyeniya; POL'SEAYA, R.G.,
tekhnicheskij redaktor.

[Rapid smelting of steel in electric arc furnaces] Skorostnye plavki
stali v dugovykh elektropechakh. Moskva, Gos.nauchno-tekhn.izd-vo
mashinostroit.lit-ry, 1952. 174 p. [Microfilm] (MIRA 7:10)

1. Leningradskoye otdeleniye Mashgisa, Zavednyushchiy redaktsiyey
(for Nikitin)
(Electric furnaces) (Steel--Electrometallurgy)

ZAMORUYEV, V.M.; SOKOLOV, A.N., redaktor; RODCHENKO, N.I., tekhnicheskiy
redaktor

[High speed steelmaking at the Kirov plant] Skorostnoe stalevarenie
na Kirovskom zavode. [Leningrad] Leningradskoe gazetno-zhurnal'noe
i knizhnoe izd-vo, 1953. 88 p. [Microfilm] (MLRA 7:10)
(Kirov--Steel industry)
(Steel industry--Kirov)

ZAMORUYEV, V. M.

"The Effect of Chemical Composition and Other Factors on the Results of the Flexural Testing of Cast High Manganese Steel G-13L." From the book, "Heat Treatment and Properties of Cast Steel." edited by N. S. Kreshchanovskiy, Mashgiz, Moscow 1955.

ZAMORUYEV, V.M.; ZHIKHAREV, D.M.; LUTSENKO, O.N.; BARANOV, I.A., inzh.,
red.; GVIRTS, V.L., tekhn.red.

[Using oxygen blast for raising the temperature of liquid iron
in the ladle; practice of the Kanoner Shipbuilding and Ship
Repairing Plant] Povyshenie temperatury zhidkogo chuguna putem
produvki kisloroda v kovshe; opyt Kanonerskogo sudostroitel'no-
sudoremontnogo zavoda. Leningrad, 1956. 8 p. (Leningradskii dom
nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii
listok, no.31. Liteinoe proizvodstvo) (MIRA 10:12)
(Oxygen--Industrial applications) (Founding)

ZAMORUYEV, V.M.

"Distribution of Tungsten Between Liquid Metal and Slags,"
lecture giveb at the Fourth Conference on Steelmaking, A.A. Baikov Institute of
Metallurgy, Moscow, July 1-6 1957

ZAMORUYEV, V.M.

"Concerning the Evaporation Process in Steel Metallurgy,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of
Metallurgy, Moscow, July 1-6, 1957

ZAMCRUYEV, V.M.

ZAMCRUYEV, V.M., Doc Tech Sci --(diss) "Tungsten in steel."
Mos, 1958. 22 pp with graphs. (Acad Sci USSR. Inst of Metallurgy
in A.A.Baykov). 150 copies. (KL, 20-58,96)

ZAMORUYEV, V.M., dots., kand.tokhn.nauk

Behavior of tungsten and phosphorus in steel smelting furnaces.
Izv.vys. ucheb.zav.; chern.met. no.9:15-22 S '58. (MIRA 11:11)

Leaf

1. Leningradskiy institut ^{ingenerov} inzhenerov ^{vodno} vodnogo transporta.
(Smelting furnaces) (Tungsten) (Phosphorus)

ZAMORUYEV, V. M.

137-1958-3-4675

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 30 (USSR)

AUTHOR: Zamoruyev, V. M.

TITLE: Improving Steel Production Methods at the Kirovskiy (Formerly Putilovskiy) Plant [Sovershenstvovaniye metodov proizvodstva stali na Kirovskom (b. Putilovskom) zavode]

PERIODICAL: V sb. : Metallurgiya, Moscow-Leningrad, AN SSSR, 1957, pp 29-37

ABSTRACT: A brief history of the development of steel smelting production at the Korovskiy plant; methods for reduction of the duration of smelting processes are described in greater detail, together with means of improving the production figures of the plant and methods of improving the technology of steel production in the post-war period.

A. L.

Card 1/1

ZAMORUYEV, V. M.

SOV/128-58-11-24/24

AUTHOR: None Given

TITLE: Dissertations Presented for Obtaining Scientific Degrees
(Dissertatsii predstavlenkiye na soiskaniye uchenykh stepeny)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 11, inside back cover (USSR)

ABSTRACT: The following dissertations were submitted. For the degree of Doctor of Technical Sciences: V.M. Zamoruyev (Institut metallurgii im. A.A. Baykova, AN SSSR - Institute of Metallurgy imeni A.A. Baykov, AS USSR) - Tungsten in Steel (Vol'fram v stali); A.M. Korol'kov (Institute of Metallurgy imeni A.A. Baykov AS USSR) - The Dependence of Casting Properties of Non-Ferrous Metal Alloys on Their Composition and the Form of Structural Diagram (Zavisimost' liteynykh svoystv splavov tsvetnykh metallov ot ikh sostava i vida diagramm scstoyaniya). For the degree of Candidate of Technical Sciences: V.V. Averin (Institute of Metallurgy imeni A.A. Baykov, AS USSR) - Solubility and Activity of Oxygen in Liquid Iron, Nickel, Cobalt and Their Alloys (Rastvorimost' i aktivnost' kisloroda v zhidkikh zheleze, nikele, kobal'te i ikh splavakh); B.V. Bauman (Moskovskiy institut stali im. I.V. Stalina - Moscow Institute of Steel imeni I.V.

Card 1/2

SOV/128-58-11-24/24

Dissertations Presented for Obtaining Scientific Degrees

Stalin) - The Effect of Nitrogen on the Structure and Mechanical Properties of Cast Iron (Vliyaniye azota na strukturu i mekhanicheskiye svoystva chuguna); G.M. Glinkov (Moscow Institute of Steel imeni I.V. Stalin) - Heat Absorption by the Bath of Open Hearth Furnaces as a Basis of Controlling the Thermal Process (Teplopogloshcheniye vanny martenovskoy pechi kak osnova regulirovaniya teplovoy raboty); N.I. Gran' (Moskovskiy institut tsvetnykh metallov i zolota im. M.I. Kalinina - Moscow Institute of Non-Ferrous Metals and Gold imeni M.I. Kalinin) - Some Problems of Fluxless Oxidizing Blowing-Through of Cobalt Alloys (Nekotoryye voprosy besflyusovoy okislitel'noy produvki kopal'tovogo splava); Du Tyn (Moscow Institute of Steel imeni I.V. Stalin) The Effect of Manganese on the Deoxidizing Capacity of Silicon in Liquid Iron (Vliyaniye margantsa na raskislitel'nyuyu sposobnost' kremniya v zhidkom zheleze); Ye.I. Malinovskiy (Ural'skiy politekhnicheskiy institut im. S.M. Kirova - Ural Polytechnical Institute imeni S.M. Kirov) - Determination of Sources of Steel Contamination by Oxide Impurities During the Discharge and Casting of Steel (Ustanovleniye

Card 2/4
2

SOV/137-58-9-18621

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 65 (USSR)

AUTHOR: Zamoruyev, V.M.

TITLE: Evaporation Processes in the Metallurgy of Steel (O protsesakh ispareniya v metallurgii stali)

PERIODICAL: V sb.: Staleplavil'n. proiz-vo. Moscow, Metallurgizdat, 1958, pp 127-150

ABSTRACT: Experimental melts were conducted in induction and arc furnaces to study the evaporation of Fe and impurities therein. The Fe and impurity fumes were trapped in a special condenser during the melts. The following are the ways in which elements may be lost as the result of evaporation: Evaporation of metal followed by oxidation of its fumes, or oxidation of the metal followed by sublimation (evaporation) of its oxides. Fe, Mn, and Al are lost via the first route, W, Mo, Ti, P, and Fe by the second. Reducing, weakly oxidizing, strongly oxidizing, and neutral atmospheres were created in various experiments in the working space of an arc furnace. Evaporation processes attain their highest level in a reducing atmosphere and diminish in an oxidizing atmosphere. In an arc furnace, the losses

Card 1/2

SOV/137-58-9-18621

Evaporation Processes in the Metallurgy of Steel

of Fe as the result of sublimation and evaporation are $> 0.4\%$ when melting occurs in a reducing atmosphere. The magnitude of Fe loss by evaporation in induction furnaces is insignificant.

L.K.

1. Metallurgy 2. Steel--Processing 3. Metals--Oxidation 4. Metals--Sublimation

Card 2/2

18.3200

78183
SOV/133-60-3-8/24

AUTHOR: Zamoruyev, V. M. (Candidate of Technical Sciences)
 TITLE: Electrometallurgy. Absorption of Metal by the Hearth of Steel Smelting Furnace
 PERIODICAL: Stal', 1960, Nr 3, pp 223-224 (USSR)

ABSTRACT: This is a report on the determination of absorption of bath admixtures by the furnace hearth. The radio-active isotope of tungsten W¹⁸⁵ was used as an indicator. The tests were conducted in a 100-kg induction furnace; 30-kg one-phase arc furnace; 79-ton basic open hearth furnace; and 40-ton basic electric furnace. A substantial source of losses in valuable admixtures in steel during melting is due to their absorption by the hearth of steel furnace, which in practice results in contamination of the metal by some elements from previous melts (chromium after melting of chromium steel, nickel after melting of nickel steel, etc.) According to the

Card 1/3

Electrometallurgy. Absorption of Metal by
the Hearth of Steel Smelting Furnace

78183
SOV/133-60-3-8/24

data of V. A. Dement'yev ("Increase of Life of Open
Hearth Furnaces," Metallurgizdat, 1950) the hearth
of open hearth furnace (magnesite and, in lesser
degree, quartzitic) has considerable porosity.
The volume of voids in magnesite burning-in equals
20-30%. Therefore, it should be noted that in
the process of melting, the surface of the hearth
does not represent the boundary of the liquid
metal. The upper layer of the hearth, having the
temperature of liquid steel, is saturated by liquid
metal to a depth depending on the temperature of the
bath and that of the hearth under the conditions
of thermal equilibrium. The conducted experiments
are discussed. Previous work of B. I. Bruk is
mentioned. The experience of Kirovskiy Plant in
Leningrad and other plants confirms that when
smelting of G13 steel (G13 steel has about 13%
manganese content) was followed by smelting of carbon
steel, a test sample (taken 10-15 minutes after melting
down) usually contained 0.55-0.65% Mn. The prevention

Card 2/3

Electrometallurgy. Absorption of Metal by
the Hearth of Steel Smelting Furnace

78183

SOV/133-60-3-8/24

of penetration of bath admixtures into the furnace hearth is a rather complex problem. For lowering the losses into the hearth the authors recommend: (a) Building the hearth from material as fine-grained as possible (magnesite) with relatively small voids between the grains; (b) conducting smelting of special steel with valuable ingredients without alternating same with smelting of other steels. With such a procedure, further transition of admixtures from metal of the bath into the metal of upper layers of the hearth should sharply diminish or stop altogether. There are 2 figures and 5 references; 4 Soviet, 1 U.S. The U.S. reference is: L. S. Darken and R. W. Gurry, Physical Chemistry of Metals, New York, (1953).

Card 3/3

ZAMORUEV, V.M.

K voprosu povedeniya titana v staleplavilynykh pechakh.

report submitted for the 5th Physical Chemical Conference on
Steel Production.

MOSCOW — 30 JUN 1959

ZAMORUYEV, V.M., doktor tekhn. nauk, prof.; FOKINA, A.Z., inzh.

Heat resistance of the piston rings of marine internal
combustion engines and ways to increase it. Trudy LIVT
no.73:5-12 '64. (MIRA 18:11)

ZAMORUYEV, V.M., doktor tekhn.nauk, prof.; KULIKOV, V.A., Inzh.

Use of boronized bucket chain pags on a dredge. Trudv LITV
no.75:29-32 '64. (MIRA 18:10)