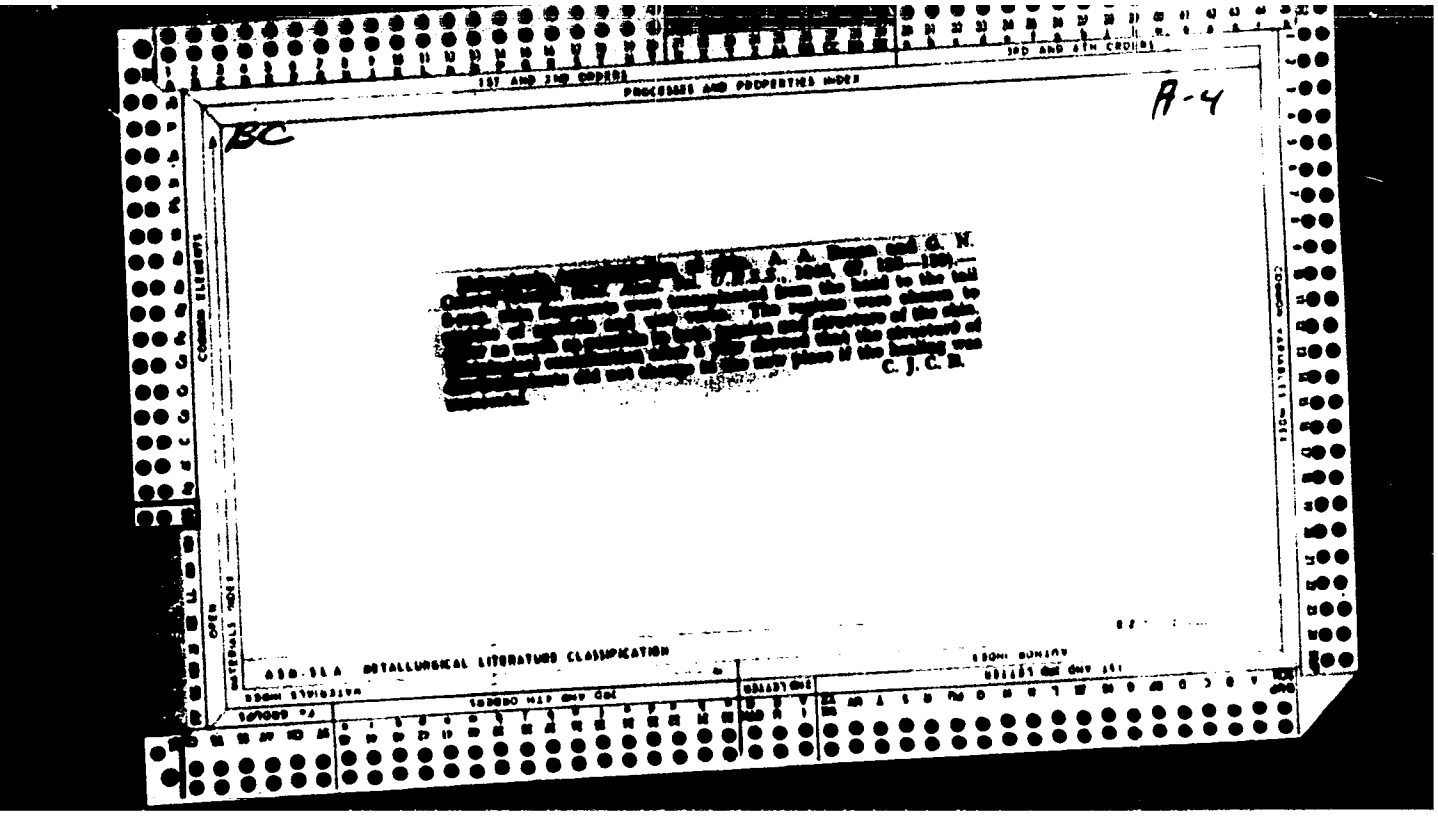
ORLOVA, G. N.

Mbr., A. M. Gorki All-Union Inst. for Exptl. Med., Acad. Med. Sci., 1945-c50-.

"Rate of Epithelization of Skin Wounds in Rabbits," Dok. AN, 47, No. 8, 1945;

"Experiments of Heteroplastic Transplantation of the Skin," Dok. AN, 70, No. 4, 1950;

"Effect of Preliminary Roentgenization on the Regeneration of the Epidermis of the Skin of Rabbits," Dok. AN, 73, No. 4, 1950.



ORLOVA, G. N.

176T67

USSR/Medicine - X-Rays, Effects
Wounds, Healing

1 Aug 50

"Effect of Preliminary Roentgenization on the Regeneration of the Epidermis of the Skin of Rabbits," A. A. Braun, G. N. Orlova, Inst Exptl Med, Acad Med Sci USSR

"Dok Ak Nauk SSSR" Vol LXXIII, No 4, 849-852

Studies histological aspects of healing of open wound on ear of rabbit, made day after local irradiation of ear by roentgen rays in dose of 4,000 roentgens, the erythemic dose being 600 roentgens. Finds regeneration of normal structure of the epidermis is produced at expense of its own pathologically changed cellular elements. Prings of 2 microphotographs.

P 176T67

ORLOVA, G. N.

USSR/Medicine, Biology - Nerve-Muscle Relationships 11 Sep 53

"Histological Changes in the Shin Muscles and Their Innervation Apparatus on Cutting of the Sciatic Nerve," G. N. Orlova, Inst Exptl Med, Acad Med Sci USSR

DAN SSSR, Vol 92, No 2, pp 421-424

Found that in muscle atrophy resulting from the cutting of the sciatic nerve there is no large increase in the number of muscle nuclei, as assumed by many investigators. There is an increase in the number of connective tissue cells and a

269T30

proliferation of blood vessels in the connective tissue. The reason for the atrophy is not a lack of blood supply, but disturbance of the innervation. Presented by Acad N. N. Anichkov 16 Jul 53.

AUTHOR: Orlova, G. N.

20-120-6-51/59

TITLE: On the Reactive Properties of Atrophied Skeletal Muscles (O reaktivnykh svoystvakh atrofirovannykh skeletnykh myshts)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 120, Nr 6, pp 1349 - 1352 (USSR)

ABSTRACT: The atrophisation process of muscles in connection with its denervation has been sufficiently investigated (Refs 1 - 4). The author succeeded already earlier in proving that this atrophisation occurs in foci. Beside atrophied sections are bundles of muscular fibers which conserve their normal histological structure. Terminations of nerves exist in such fibers, whereas they are lacking in atrophied fibers. It is known that the atrophisation process proceeds slowly. The degree of atrophy depends on the time which has passed since the denervation. The modification of the capacity for regeneration of the muscular fibers in the course of their atrophisation had to be explained. For this purpose two experimental series were carried out. I, The muscle was denervated and injured at the same time (Ref 5). The histological picture did not differ at all from that of an

Card 1/3

On the Reactive Properties of Atrophied Skel tal Muscles 20-12e 6-51/59

innervated muscle. II) The muscle was injured in the state of a progressed atrophy. For this purpose a section of the nerv s ischiadicus (1 cm long) of 20 white rats was cut above the point of branching into nervus fibularis communis and nervus tibialis 50 60 days later a triangle (with a side of 5 mm.) was cut out of the musculus gastrocnemius. The results showed that the muscle in the state of thorough atrophy is incapable of the regener tion of the sections in which the muscular fibers are not innervated and were subjected to atrophic changes However a complete denervation within an entire organism as well as a complete muscular atrophy are hardly possible since overlaps of the peripheral nerves and their anastomoses take place regularly. There are 2 figures and 8 reference which are Soviet

ASSOCIATION: Institut eksperimental'noy meditsiny Akademii meditsinskikh nauk SSSR, g. Leningrad (Leningrad, Institute of Experiment Medicine of the Academy of Medical Sciences, USSR)

PRESENTED: March 17, 1958, by N.N.Anichkov, Member Academy of Sciences USSR

Card 2/3

On the Reactive Properties of Atrophied Skeletal Muscles

20-12-6-31/[illegible]

SUBMITTED: March 3, 1958

1. Muscular atrophy—Analysis 2. Muscular atrophy—Physiological factors 3. Muscles—Properties 4. Nerves—Regeneration

Card 3/3

ZHINKIN, L.N.; ORLOVA, G.N.; SIROTINA, M.Yu.

Inclusion of methionine in developing and regenerating somatic muscles [with summary in English]. Arkh.anat.gist. i embr. 36 no.1:32-38 Ja '59. (MIRA 12:3)

1. Laboratoriya gistologii (zav. - prof. L.N. Zhinkin) Instituta eksperimental'noy meditsiny AMN SSSR. Adres avtora: Leningrad, Kirovskiy pr., 69/71., Institut eksperimental'noy meditsiny AMN SSSR.

(MUSCLES, metab.
methionine, inclusion of prep. labeled by radiosulfur during regen. & develop. (Rus))
(METHIONINE, metab.
musc., inclusion of radiosulfur-labeled metnionine during regen. & develop. (Rus))

ORLOVA, G.N.

Change in cell division in the epithelium of the mucous membrane of the lip under conditions of disturbed innervation. TSitologiia 2 no.4:404-411 Jl-Ag '60. (MIRA 13:9)

1. Laboratoriya gistologii Instituta eksperimental'noy meditsiny Akademii meditsinskikh nauk SSSR, Leningrad.
(KARYOKINESIS) (EPITHELIUM)

ORLOVA, G.N.

Effect of X rays on the regimen of cell division in the mucosal epithelium of the tongue. TSitologiia 3 no. 1:67-74 Ja-F '61. (MIRA 14:2)

1. Laboratoriya eksperimental'noy gistologii Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.
(X RAYS—PHYSIOLOGICAL EFFECT) (CELL DIVISION (BIOLOGY))

NABOKOV, V.A.; SADOVNIKOV, A.I.; USPENSKIY, I.V. Prinimali u[illegible]; LARYUKHIN, M.A.; KRIVTSOVA, Ye.N.; YERSHOVA, T.S.; KISH, [illegible]; ORLOVA, G.N.

Use of a helicopter for spraying foci of tick encephalitis in forests. Med. paraz. i paraz. bol. 33 no.1:64-68 Ja-F '64. (MIRA 17:4)

1. Otdeleniye toksikologii i bor'by s chlenistonogimi (zav. - prof. V.A. Nabokov) Instituta meditsinskoy parazitologii i tropicheskoy meditsiny imeni Ye.I.Martsinovskogo (direktor - prof. P.G. Sergiyev) i Gosudarstvennyy nauchno-issledovatel'skiy institut Grazhdanskogo Vozdushnogo Flota, Moskva. 2. Institut meditsinskoy parazitologii imeni Ye.I. Martsinovskogo (for Laryukhin, Krivtsova, Yershov 3. Gosudarstvennyy nauchno-issledovatel'skiy institut Grazhdanskogo Vozdushnogo Flota (for Kish, Orlova).

ORLOVA, G. P.

"On interaction of water with silicate melt under pressure."

report submitted for 4th All-Union Conf on Structure of Glass, Leningrad, 16-21 Mar 64.

SHARAFIYEV, M.Sh.; ORLOVA, G.V.

Chrome-magnesite periclase lining of rotary kilns for the burning of cement clinkers. Ogneupory 27 no.3:142-144 '62. (MIRA 15:3)

1. AzNIITSement.
(Kilns, Rotary) (Refractory materials)

SHARAPIYEV, M.Sh.; ORLOVA, G.V.

Mutual overgrowths of magnesioferrite and forsterite in chrome-magnesite brick. TSement 29 no.1:15 Ja-F '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsementnoy promyshlennosti.
(Refractory materials)

SHARAFIYEV, M.Sh.; ORLOVA, G.V.

Using the Fedorov universal stage for studying clinkers. TSement 29 no.3:12-13 My-Je '63. (MIRA 17:1)

1. Azniitsement.

ORLOVA, G.V.

From May 18-21 the third Scienctific Conference of the results of the work of the Scientific-Research Institutions of Siberia for 1951 and first quarter of 1952 was held in the Siberian Zonal Scientific-Research Veterinary Institute.

G.V. ORLOVA, scientific associate of Altai NIVOS, gave a report on the topic "Ulitization of Protein-virus complex in Foot-and-Mouth Disease".

SO: Veterinariya;Vol. 29;No.9;Sept.1952 pp 62-64

US [illegible]biology. Hemoglobi[illegible] Veterin. Brucel[illegible] F[illegible]

[illegible] Zhur - Biol., [illegible], No 6247

Author : Orlova D.V.
Inst : Altayskiy Krayevoy Scientific Research Veterin[illegible] Station
Title : The Application of the Vaccine from Strain No. 19 in the Immunity of Farm Animals with Different Brucell Infection.

Orig Pub : Sb. nauchn. rabot Altayst. krayevoy n.-i. vet. st., 1957, vyp. 1, 73-87

Abstract : No abstract

Card : 1/1

USSR. Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi. R-1

Abs Jour : Ref Zhur-Biol., No 18, 1958, 83513

Author : Orlova, G. V.
Inst : Altay Kray Scientific Research Veterinary Station.
Title : Comparative Evaluation of Complex Diagnosis Methods in Bovine Brucellosis.

Orig Pub : Sbornik nauchn. rabot Altaysk. krayevoy n.-i. vet. st., 1957, vyp. 1, 88-101

Abstract : No abstract is given

Card 1/1

SAL'NIKOV, M.D.; ORLOVA, G.V.

Work of the Kamen'-on-Ob' interdistrict veterinary bacteriological laboratory of the Altai Territory. Veterinariia 34 no.8:9-12 Ag '57. (MLRA 10:9)

1. Starchiy veterinarnyy vrach veterinarnogo otdela upravleniya sel'skogo khozyaystva Altayskogo kraya (for Sal'nikov). 2. Starshiy nauchnyy sotrudnik Nauchno-issledovatel'skoy veterinarnoy stantsii (for Orlov).
(Altai Territory--Veterinary laboratories)

BYKHOVSKAYA, M.S.; ORLOVA, I.A.

Separate determination of manganese, chromium, and iron in the air by polarography. Zav.lab. 27 no.5:540-542 '61. (MIRA 14:5)

1. Institut gigiyeny truda i profzabolevaniy Akademii meditsinskikh nauk SSSR.

(Manganese--Analysis) (Chromium--Analysis)
(Iron--Analysis)

MIRCHINK, T.G.; ORLOVA, I.A.

Mycoflora of some Gray-Brown forest soils in the Voronezh Preserve and its toxic characteristics. Vest. Mosk. un. Ser. 6: Biol., pochv. 17 no.3:70-77 My-Je '62. (MIRA 15:6)

1. Kafedra biologii pochv Moskovskogo universiteta.
(VORONEZH PRESERVE--SOIL MICRO-ORGANISMS)
(FOREST SOILS)
(FUNGI)

TATAROV, Z.I.; ALIKHASHKIN, Ya.I., kand. fiz.-matem. nauk, otv. red.; ORLOVA, I.A., red.

[Standard programs for the "Strela-3" computer.] Standartnye programmy dlia mashiny "Strela-3." Moskva, VTs, AN SSSR, 19[illegible]. 8 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Standartnye i tipovye programmy dlia mashiny "Strela-3," no.4) (MIRA 18:1)

POPOV, S.N.; GOLOVANCHIKOV, A.M.; GONCHAROV, G.I.; LYSENKO, T.P.; ORLOVA, I.A., inzh., red.; VOROB'YEVA, L.V., tekhn.red.

[New transverse profiles of the ballast section] Novye poperechnye profili ballastnoi prizmy. Moskva, Transzheldorizdat, 1963. 31 p. (MIRA 17:1)

GRABLEV, A.S.; KOROL'KOV, N.V., kand. tekhn.nauk, otv. red.; ORLOVA, I.A., red.; KORKINA, A.I., tekhn. red.

[High-speed ferrite diode elements with a.c. power supply for electronic digital computers] Bystrodeistvuiushchie ferrit-diodnye elementy s pitaniem peremennym tokom dlia TsVM. Moskva, Vychislitel'nyi tsentr AN SSSR, 1963. 63 p. (MIRA 17:1)

AGEYEV, M.I.; PODDERYUGIN, V.A., otv. red.; ORLOVA, I.A., red.

[Principles of the "Algol-60" algorithmic language.] Osnovy algoritmicheskogo iazyka Algol-60. Moskva, 1964. 114 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Otdelnye voprosy programmirovaniia, no.1).

KHOVANSKIY, G.S.; DITKIN, V.A., prof., otv. red.; ORLOVA, I.A., red.

[Methods in nomography] Metody nomografirovaniia. Moskva, Vychislitel'nyi tsentr AN SSSR, 1964. 223 p. (MIRA 18:3)

ANTIPOV, I.N.; PODDERYUGIN, V.D., otv.red.; ORLOVA, I.A., red.

[Use of Simpson's method in solving a definite integral] Vychislenie opredelennogo integrala metodom Simpsona. Moskva, Vychislitel'nyi tsentr AN SSSR, 1964. 9 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Standartnye i tipovye programmy BESM-2, no.9).
(MIRA 17:4)

BOGOMOLOV, A.M., MOROZOVA, [illegible] O[illegible]NIKINA, N.A., [illegible] MA[illegible]ENK[illegible], G.A.; MITA[illegible]OV, D.G.; SPAGOVICH, V.[illegible], kand.[illegible] [illegible] ORI[illegible]OVA, [illegible]A., red.

[Programs in linear algebra.] Programmy po lineĭnoĭ algebre. Moskva, 1964. 62 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Standartnye [illegible] programmy [illegible] mashin [illegible] no.7) [illegible]

NIKISHIN, V.S.; DEM[illegible]V, I.I., kand. tekhn. nauk, otv. red.;
ORLOVA, I.A., red.

[Thermal stresses in a sectional cylinder with arbitrary distribution of temperature by height] Temperaturnye napriazheniia v sostavnom tsilindre pri proizvol'nom raspredelenii temperatury po vysote. Moskva, Vychislitel'nyi tsentr AN SSSR, 196[illegible]. 110 p. (MIRA 17:10)

TOROPOV, V.S KOROL'KOV, N.V., kand.tekhn.nauk, otv.red.; ORLOVA, I.A., red.;

[Some problems in magnetic polarity reversal in ferrites in particular cycles of the hysteresis loop]. Nekotorye voprosy peremagnichivaniia ferritov po chastnym tsiklam petli gisterezisa. Moskva, 1964. 91 p. (Akademiia nauk SSSR, Vychislitel'nyi tsentr. Soobshcheniia po vychislitel'noi tekhnike, no. 3) (MIRA 17:6)

BOCHEK, I.A.; ANTIPOV, I.N., otv.red., [illegible], I.A., red.;
KORKINA, A.I., tekhn.red.

[Program for calculating eigenvalues and eigenvectors of a symmetrical matrix]. Programma vychisleniia sobstvennykh znach[illegible] i sobstvennykh vektorov simmetricheskoi matritsy. Moskva 1964. 23 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Standartnye tipovye programmy [illegible], no. [illegible] (MIRA [illegible]

UL'MASOV, N.; KHOVANSKIY, G.S., doktor tekhn. nauk, otv. red.;
ORLOVA, I.A., red.

[Nomograms for the hydraulic design of sewerage networks]
Nomogrammy dlia gidravlicheskogo rascheta kanalizatsion-
nykh setei. Moskva, VTs AN SSSR, 1964. 30 p.
(MIRA 17:8)

DASHEVSKIY, Lev Naumovich, kand. tekhn. nauk; POGREBINSKIY, Solomon Beniaminovich, inzh.; [illegible], Yekaterina Alekseyevna, kand. tekhn. nauk **Prinimali uchastiye** LOSEV, V.D.; ABAMYSHNIKOVA, L.M.; ZORINA, Z.S.; OKLOVA, I.A.; ZUBATENKO, A.Ya.; **PAVLENKO, Yu.S., inzh., retsenzent**; GLUSHKOV, V.M., akademik, red.

[The "Kiev" computer, its design and operation] Vychislitel'naia mashina "Kiev"; proektirovanie i ekspluatatsiia. Kiev, Tekhnika, 196[illegible]. 3[illegible] p. (MIRA 17:11)

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FEDULOV, Vasiliy Fedorovich; ANTONOV, Fedor Ivanovich; ZAKATALOVA, Aleksandra Iosifovna; ORLOVA, I.A., red.

[Characteristics of the maintenance of tracks with reinforced concrete ties] Osobennosti soderzhaniia puti s zhelezobetonnymi shpalami. Moskva, Transport, 1964. 19 p. (MIRA 17:10)

KOROBOCHKIN, B.I.; FILIPPOV, Yu.A.; DITKIN, V.A., prof., otv. red.; ORLOVA, I.A., red.

[Tables of modified Whittaker functions] Tablitsy modifitsirovannykh funktsii Uittekera. Moskva, Vychislitel'nyi tsentr AN SSSR, 1965. 321 p. (MIRA 18:5)

DITKIN, V.A., prof., otv. red.; ORLOVA, I.A., red.

[Tables of the logarithmic derivative of the gamma function and its derivatives in a complex region] Tablitsy logarifmicheskoi proizvodnoi gamma-funktsii i ee proizvodnykh v kompleksnoi oblasti. Moskva, 1965. 363 p. (MIRA 18:7)

1. Akademiya nauk SSSR. Vychislitel'nyy tsentr.

RASSOKHIN, G.I.; KOROL'KOV, N.V., kand. tekhn. nauk, otv. red.;
ORLOVA, I.A., red.

[Method for the synthesis of logical networks using inhibitor elements with multiple inputs] Metod sinteza logicheskikh skhem na elementakh zapreta so mnogimi vkhodami. Moskva, Vychislitel'nyi tsentr AN SSSR, 1965. 27 p. (MIRA 18:7)

BELYAKOV-BODIN, V.I.; KOLESNIKOV, M.A.; TORGOV, Yu.I.; SHAFRANSKIY, V.V.; SMIRYAGIN, V.P., otv. red.; ORLOVA, I.A., red.

[Supervision of the operation of electronic computers] Kontrol' raboty elektronnykh vychislitel'nykh mashin. Moskva, 1965. 48 p. (MIRA 18:8)

1. Akademiya nauk SSSR. Vychislitel'nyy tsentr.

[illegible], [illegible], [illegible], otv. red.; ORLOVA, [illegible],

[illegible] of Chebyshev polynomials orthonormalized on a system of equidistant points] Tablitsy polinomov Chebysheva, ortonormirovannykh na sisteme ravnootstoiashchikh tochek. Moskva, Vychislitel'nyi tsentr AN SSSR, 1965. [illegible] p. (MIRA 18:12)

ORLOVA, I.A., red.

[Accelerating the car turnover] Uskorenie oborota vagonov. Moskva, Transport, 1965. 92 p. (MIRA 18:10)

LOMNEV, S.P.; ORLOVA, I.A., red.

[Calculation of electrophysical units and electrophysical phenomena using digital computers] Raschet i issledovanie elektrofizicheskikh ustanovok i elektrofizicheskikh iavlenii na tsifrovykh vychislitel'nykh mashinakh. Moskva, Vychislitel'nyi tsentr AN SSSR, 1970. 190 p.

SAMSONOV, Aleksey Vasil'yevich; LYAKHOV, Gennadiy Aleksandrovich; ORLOVA, I.A., red.

[Labor safety in railroad traffic operations] Okhrana truda v khoziaistve dvizheniia zheleznykh dorog. Moskva, Transport, 1965. 182 p. (MIRA 18:10)

NIKISHIN, V.S.; VEYTSMAN, R.I., otv. red.; ORLOVA, I.A., red.

[Stressed state of a symmetrically loaded elastic circular cylinder] Napriazhennoe sostoianie simmetrichno nagruzhennogo uprugogo krugovogo tsilindra. Moskva, Vychislitel'nyi tsentr AN SSSR, 1965. 193 p. (MIRA 18:12)

POVOROZHENKO, Vladimir Vasil'yevich; ORLOVA, I.A., red.

[Increasing the operative capacity of freight cars] Povyshenie proizvoditel'nosti gruzovogo vagona. Moskva, Transport, 1965. 195 p. (MIRA 18:7)

SHAPOSHNIKOV, V.N.; KAZANSKAYA, T.B.; ORLOVA, I.G.

Effect of dicarboxylic acids and some other compounds on the biosynthesis of streptomycin. Izv. AN SSSR. Ser. biol. no.6:813-824 N-D '62. (MIRA 16:1)

1. Institut mikrobiologii AN SSSR.
(STREPTOMYCIN)

ORLOVA, I. G.

ORLOVA, I. G.: "Investigation of the effect of certain properties of equilibrium fusion on the transformation of the quartz in tridymite into a ceramic with the properties of lines." Khar'kov, 1955. Min Higher Education USSR. Khar'kov Polytechnic Inst imeni V. I. Lenin. (Dissertation for the degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

ORLOVA, I. G.

1958 2-2292

Translation from Referativnyy zhurnal. Metallurgiya. 1958. Nr 2 p 12 (USSR)

AUTHORS Kaynarskiy, I.S. Orlova, I.G.

TITLE Phase Transformation of Silica (Prevrashcheniya v sisteme kremnezema)

PERIODICAL V sb Fiz -khim osnovy keramiki Moscow. Promstroyizdat, 1956, pp 507-519

ABSTRACT: This is a survey of the latest information on the transformations of SiO_2 at high temperatures into tridymite, cristobalite, quartz glass, etc Included are data obtained by the Authors on the "cristobalitizing" effect of different cations on finely divided quartz and on the "tridymitization" of SiO_2 as a function of the nature of the raw material involved and of various other factors Bibliography 41 references S.G.

1. Silica—Transformation 2. Silica—Temperature effects

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ORLOVA, I. G.

131-12-8/9

AUTHOR: Fel'dgandler, G.G.

TITLE: Short Reports (Kratkiye soobshcheniya). Conference of the Scientific-Technical Council of the Institute for Refractories in Khar'kov (Sessiya nauchno-tekhnicheskogo soveta instituta ogneuporov v Khar'kove)

PERIODICAL: Ogneupory, 1957, Nr 12, pp. 567-568 (USSR)

ABSTRACT: This conference took place on October 28/30, 1957, and was attended by many representatives of scientific institutes and the corresponding industries. Reports were heard on various problems connected with refractories, of which the following met with the greatest interest: 1.) Professor Karyakin, L.I., head of the petrographical laboratory of the Khar'kov Institute for Refractories, spoke about the results obtained by research work connected with kaolins and clays of the Ukraine. 2.) I.G. Orlova, Candidate of Technical Sciences, gave a report on the research work carried out concerning sintering and swelling up of refractory clays and kaolins when heated. 3.) T.S.Ignatova, scientific collaborator of long standing of the Ural department of the Leningrad Institute for Refractories, delivered a report on the results obtained by laboratory work as well as by the industrial testing of the rational utilization of primary kaolin found in the Kyshtym deposits and of the semiacid clays discovered in the Ural deposits.

Card 1/2

ORLOVA, I. G. and I. S. KAYNARSKIY

"Relationship Between the Physicochemical Properties of Equivalent Melts and Quartz Tridymitsation" p. 359

[redacted]

Transactions of the [illegible] and Petrography [illegible]

reprints of reports presented at [illegible] The purpose of the [illegible] in the fields [illegible] stress the [illegible]

KAYNARSKIY, I.S.; ORLOVA, I.G.

Various crystallization patterns of molten silicates. Zhur. neorg. khim. 3 no.6:1416-1427 Je '58. (MIRA 11:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut ogneuporov.
(Silicates) (Crystallization)

AUTHOR: Orlova, I G. SOV/131-58-8-5/12

TITLE: On the Physical-Chemical Nature of the Solidification of Fine-Grained Dinas Mass During Burning (O fiziko-khimicheskoy sushchnosti uprochneniya v obzhige tonkozernistoy massy dinasa)

PERIODICAL: Ogneupory, 1958, Nr 8, pp 367-371 (USSR)

ABSTRACT: The strength of Dinas depends, on the whole, on the content of fine quartz fractions in the mass as well as on the pressure and the composition of additions (Fig 1). The influence exercised by the phase transformation of silicon dioxide as well as the process of the modification of the strength of Dinas have hitherto not been explained. The composition of additions influences pressure- and breaking-strength (Table 1) Samples containing alkaline additions were found to have greater strength. Table 2 shows the calculated values of strength, and, besides, the strength of such samples is mentioned with respect to which there is no agreement. The high degree of mechanical strength of samples containing alkaline additions may be explained by its high tridymite content, which may also be seen from figure 2, which shows the micro

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On the Physical-Chemical Nature of the Solidification of Fine-Grained Dinas Mass During Burning SOV/131-58-6-5/12

structure of sample 3 given in table 1 with a tridymite content of 80 - 85 % as well as a mechanical strength of 800 kg/cm^2. Sample 9 (Fig 3) contains only 50 - 55 % tridymite and has a strength of 600 kg/cm^2, and sample 14 (Fig 4) contains about 20 - 25 % tridymite and its strength amounts to about 400 kg/cm^2. A reduction of the content of silicon dioxide in melts leads to a reduction of the tridymite content as well as of strength, which is confirmed by the values obtained by experiments (Figs 5 and 6). An increase of the additional quantity in the Dinas mass does not increase the mechanical strength of the burned fragment (Table 3) because this exercises no influence upon the tridymite content. Conclusions: 1) It was found that the greatest strength is attained in samples of fine quartzite fractions by means of alkaline additions. 2) It was found that the process of solidification consists in the transformation of silicon dioxide into tridymite under the influence of additions. 3) The connection between the structure and the solidification of the

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SOV/131-58-8-7/12

On the Physical-Chemical Nature of the Solidification of Fine-Grained Dinas Mass During Burning

fine fractions of Dinas masses during burning was determined. There are 7 figures, 3 tables, and 12 references, 12 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut ogneuporov (All-Union Scientific Research Institute for Refractories)

Card 3/3

15(2)

AUTHORS: Kaynarskiy, I. S., Orlova, I. G., Merkulova, Ye. V. SOV/131-59-4-9/16

TITLE: The Pressing of Refractories Containing Graphite and Carborundum in Thermoplastic State (Pressovaniye grafit- i karborundsoderzhashchikh ogneuporov v termoplastichnom sostoyanii)

PERIODICAL: Ogneupory, 1959, Nr 4, pp 173-180 (USSR)

ABSTRACT: In the present paper the results of pressing graphite- and carborundum-containing masses are described which were made thermoplastic by means of additions of fireproof clay. The blanks were pressed by means of a unit which is presented in figure 1. Experiments with graphite KLZ-2 showed that it is possible to obtain first-rate products by pressing graphite-clay-containing masses in thermoplastic state (Table 1). especially when using ground graphite the structure was improved (Table 2). At an amount of pressure applied of 75 kh/cm^2 products of different density and porosity, depending on graphite content and pressure temperature, are obtained from graphitic-argillaceous masses (Table 3). The influence exerted by the graphite content of the masses upon the

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apparent porosity of the samples is presented in figures 2 and 3. The dependence of the breaking strength under pressure of the graphitic-argillaceous samples on the graphite content within the mass is demonstrated in figure 4. The interrelation between the breaking strength under pressure and the apparent porosity of graphitic-argillaceous samples are given in figure 5. The properties of graphitic-argillaceous refractories pressed in thermoplastic state at a temperature of 1300° are listed in table 4; figure 6 gives the model of a graphitic-argillaceous stopper for steel casting. Further carborundum-argillaceous refractories were investigated which were pressed in thermoplastic state at a temperature of 1300° and an amount of 100 kg/cm^2 of pressing applied (Table 5). The density and deformation of graphite-carborundum-argillaceous pressed refractories are presented in table 6 and their properties in table 7. Finally the authors of this article state that this pressing method has considerable advantages as compared with the method of hot pressing, which are based on various physico-chemical processes. There are 6 figures, 7 tables, and 1 Soviet reference.

The Pressing of Refractories Containing Graphite and Carborundum in Thermoplastic State SOV/131-59-4-9/15

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories)

Card 3/3

KAYNARSKIY, I.S.; ORLOVA, I.G.; MERKULOVA, Ye.V.

Properties of hot-pressed refractories on a basis of clay and kaolin. Sbor.nauch.trud. UNIIO no.5:79-91 '61. (MIRA 15:12)
(Firebrick)

KAYNARSKIY, I.S.; ORLOVA, I.G.; MERKULOVA, Ye.V.

Thermoplastic pressing of common clay and kaoline bricks.
Ogneupory 26 no. 2:71-80 '61. (MIRA 14:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
(Firebrick)

KAYNARSKIY, I.S.; ORLOVA, I.G.; PROKOPENKO, M.I.; SOKHNA, G.Ye.; YEVDOKIMOV, Yu.P.

Testing of zircon dinas bricks in the arches of steel-smelting arc furnaces. Ogneupory 27 no.2:77-80 '62. (MIRA 15:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Kaynarskiy, Orlova, Prokopenko). 2. Khar'kovskiy traktornyy zavod im. Ordzhonikidze (for Sokha, Yevdokimov).
(Firebrick--Testing) (Electric furnaces)

KAYNARSKIY, I.S.; ORLOVA, I.G.

Grog-free refractories made of high-grade clays and kaolins.
Ogneupory 27 no.10:444-449 '62. (MIRA 15:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
(Refractory materials)

KAZANSKAYA, T.B.; ORLOVA, I.G.

Effect of organic acids of the aliphatic series C_2 - C_6 on the growth of Actinomyces streptomycini and the formation of streptomycin by it. Dokl.AN SSSR 145 no.5:1158-1159 '62. (MIRA 15:8)

1. Predstavleno akademikom V.N.Shaposhnikovym.
(STREPTOMYCIN) (ACIDS, FATTY) (ACTINOMYCES)

L 56553-65 EPA(s)-2/EWT(m)/T/EWP(c) Pt-7 WH

ACCESSION NR: AR5016494 UR/0124/65/000/006/V070/V070

SOURCE: Ref. zh. Mekhanika, Abs, 6V593

AUTHOR: Orlova, I. G.

TITLE: On the plastic deformation of aluminosilicate refractories

CITED SOURCE: Sb. nauchn. tr. Ukr. n.-i. in-t ogneuporov, vyp. 7(54), 1963, 77-85

TOPIC TAGS: aluminosilicate, creep characteristic, plastic deformation, refractory, sintering

TRANSLATION: The creep of the main types of aluminosilicate refractories at temperatures of 1300-1500C was investigated. It was established that the creep diminishes when the temperature of sintering is increased. Calculating the coefficient of correlation between porosity and the magnitude of creep has shown no such correlation to exist. The approximate viscosity of the refractories at 1350-1450C was calculated from the amounts of creep. It was shown that, at the temperature which causes the refractories under the stress of 2 kg/cm^2 to flow, their apparent viscosity varies within fairly narrow limits $(1.5\text{-}5.0)\cdot 10^{11}$ poises. Bibliography 19 entries. Ye. A. Myakotin

SUB CODE: MM, MT ENCL: 00

Card 1/1 mb

L 8648-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/EPA(w)-2/EWP(b) Pab-24/Pt-10/
Pu-4 WH

ACCESSION NR: AP4042025 S/0020/64/157/001/0168/0170

AUTHOR: Kaynarskiy, I. S.; Degtyareva, E. V.; Orlova, I. G.

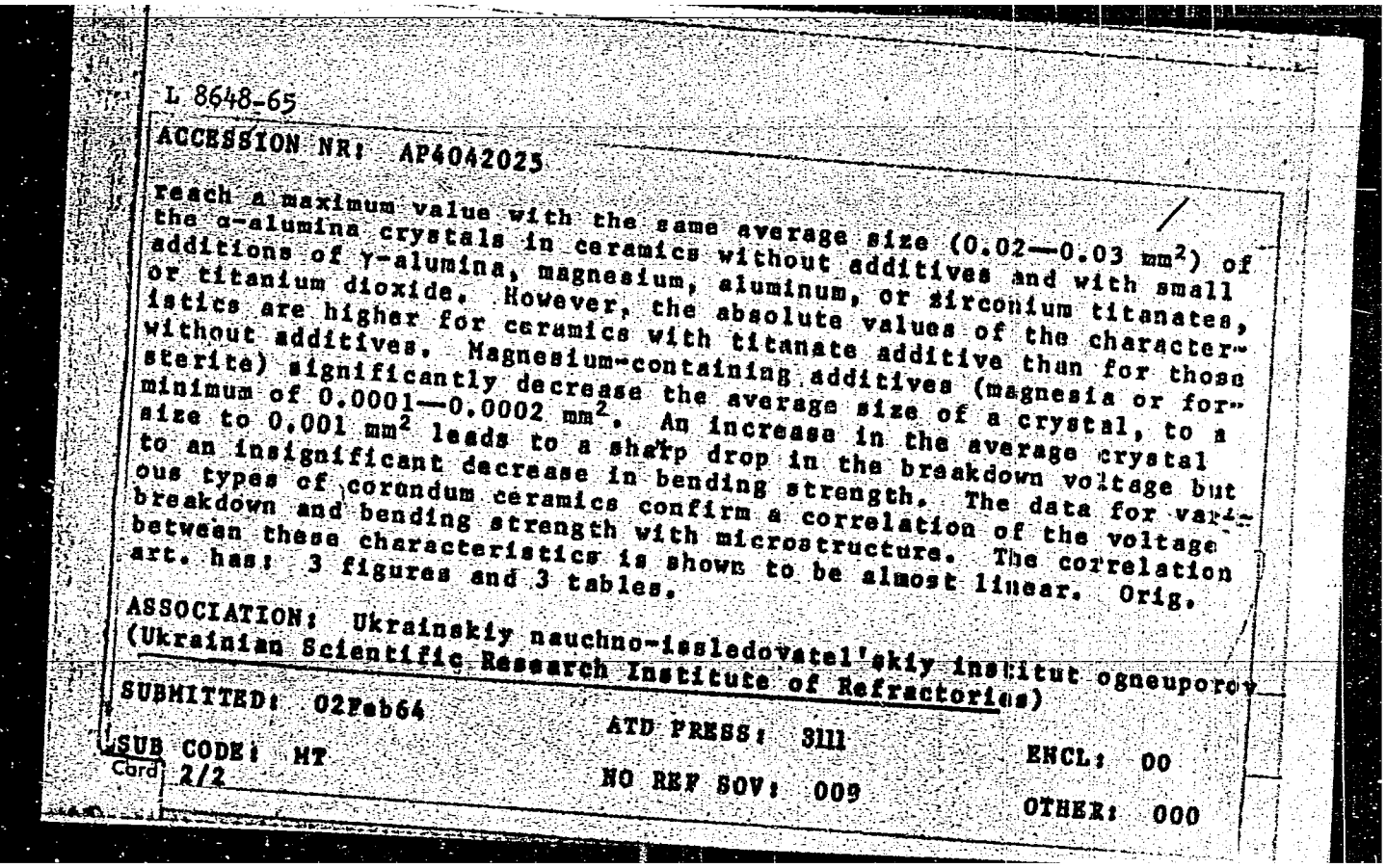
TITLE: Correlation of dielectric and mechanical strength of corundum ceramics

SOURCE: AN SSSR. Doklady*, v. 157, no. 1, 1964, 168-170

TOPIC TAGS: corundum, alpha alumina, corundum ceramic, gamma alumina additive, titanate additive, titania additive, magnesia additive, forsterite additive, ceramic microstructure, breakdown voltage, bending strength

ABSTRACT: Wide discrepancies in literature data on the mechanical and dielectric properties of corundum ceramics prompted an investigation of the bending strength and breakdown voltage of such ceramics having different microstructures, with and without additives. The difference in microstructure of the body, measured by the average size of a crystal, was achieved by varying its annealing temperature and the degree of alumina dispersion, the latter expressed as the percentage of the size fraction below 3μ. Both bending strength and breakdown voltage

Card 1/2



L 8648-65

ACCESSION NR: AP4042025

reach a maximum value with the same average size (0.02—0.03 mm^2) of the α-alumina crystals in ceramics without additives and with small additions of γ-alumina, magnesium, aluminum, or zirconium titanates, or titanium dioxide. However, the absolute values of the characteristics are higher for ceramics with titanate additive than for those without additives. Magnesium-containing additives (magnesia or forsterite) significantly decrease the average size of a crystal, to a minimum of 0.0001—0.0002 mm^2. An increase in the average crystal size to 0.001 mm^2 leads to a sharp drop in the breakdown voltage but to an insignificant decrease in bending strength. The data for various types of corundum ceramics confirm a correlation of the voltage breakdown and bending strength with microstructure. The correlation between these characteristics is shown to be almost linear. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories)

SUBMITTED: 02Feb64 ATD PRESS: 3111 ENCL: 00

SUB CODE: MT NO REF SOV: 009 OTHER: 000

Card 2/2

L 2128-65 EPA(s)-2/EWT(m)/EPF(n)-2/EPA(w)-2/T/EWP(q)/EWP(b) Pab-24/
Pt-10/Pu-4 WH

ACCESSION NR: AP4042205 S/0020/64/157/002/0331/0333

AUTHORS: Orlova, I.G.; Kaynarskiy, I.S.;

TITLE: Kinetics of deformation of corundum specimens upon heating

SOURCE: AN SSSR. Doklady*, v. 157, no. 2, 1964, 331-333

TOPIC TAGS: deformation kinetics, corundum, vacancy diffusion

ABSTRACT: The authors have experimentally investigated the deformation of corundum which did not undergo prior annealing, under the action of its own weight, at different temperatures of heating. The camber of small prisms of corundum 5x5 mm at the distance between the supports of 60 mm was measured. The stress caused by the weight amounted to about 10 gm/mm^2. The deformation vs. time curves were found to be of two types. One type showed saturation, the other did not. The deformation depends on the kind and on the amount of admixtures. The deformation under its own weight was found to follow the same rules which correspond to the vacancy diffusion mechanism of metal deformation and of sintering of metal powders. Orig. art. has: 4 figures, 1 table.

Card 1/2

L 2128-65
ACCESSION NR: AP4042205

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrain Scientific Research Institute of Refractory Materials)

SUBMITTED: 25Jan64

SUB CODE: MM, SS

NR REF SOV: 003

ENCL: 00

OTHER: 001

Card 2/2

SHAPOSHNIKOV, V.N., akademik; KAZANSKAYA, T.B.; ORLOVA, I.G.

Characteristics of Aerobacter cloacae No.28 as related to the accumulation of valine in the medium. Dokl. AN SSSR 159 no.6: 1408-1410 D '64 (MIRA 18:1)

1. Institut mikrobiologii AN SSSR.

ACCESSION NR: AP4043452 S/0131/64/000/008/0378/0380

AUTHOR: Orlova, I. G., Mirkina, R. Ye.

TITLE: Effect of microstructure on the modulus of elasticity of corundum ceramics

SOURCE: Ogneupory*, no. 8, 1964, 378-380

TOPIC TAGS: ceramic, refractory, corundum, corundum ceramic, elasticity modulus, ceramic elasticity, ceramic microstructure

ABSTRACT: The theory that there is a regular relationship between modulus of elasticity and the grain size in polycrystalline materials was verified in a series of tests in which the modulus was determined by a static method in 4.5 x 4.5 x 80 mm samples of corundum ceramics. The samples, containing more than 99.8% Al_2O_3, consisted of fine (<5, 10, 15, 30μ), intermediate-size (200, 250, 350μ) and large (600, 800μ) α-Al_2O_3 crystals. From an analysis of the graph obtained it was found that the dependence of the modulus on the grain size can be expressed by the equation:

$$E = 2.04 \cdot 10^6 \cdot d^{-0.2}, \quad (1)$$

in which d is the predominant average size of the crystals in mm. Measured values of

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ACCESSION NR: AP4043452

elasticity and those found from the equation were compared and found to be in good agreement. Orig. art. has: 2 tables, 2 figures and 2 formulas.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractory Materials)

SUBMITTED: 00 ENCL: 00

SUB CODE: MT NO REF SOV: 002 OTHER: 002

Card 2/2

L 27822-65 EWG(j)/EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EPR/EPA(w)-2/T/EWP(t)/EWP(b) Pab-10/Pr-4/Ps-4/Pt-10/Pu-4 IJP(c) WH/JD

ACCESSION NR: AP5002925 S/0131/65/000/001/0028/0037

AUTHOR: Orlova, I. G.; Kaynarskiy, I. S.; Mirkina, R. Ye.

TITLE: Effect of additives on the deformation of green corundum during sintering

SOURCE: Ogneupory, no. 1, 1965, 28-37

TOPIC TAGS: maganesium silicate, alumina, spinel magnesite, talc, magnesium oxide, corundum deformation, steady deformation, green corundum, sintering, magnesium titanate, zirconium titanate, aluminum titanate

ABSTRACT: The authors assessed the effect of magnesium, zirconium and aluminum titanates as well as that of titanium dioxide, zirconium and magnesium silicates, silica, spinel magnesite and talc heated to 1300 - 1500 C on the deformability of green alumina containing over 99.89% Al_2O_3 and 0.02% Na_2O. As shown in Fig. 1 of

mation sets in is influenced by the properties of the material. Steady deforma-

Card 1/5

L 27882-65

ACCESSION NR: AP5002925

tion was absent in alumina specimens heated up to 1500 C. In specimens with MgO additions, which react with corundum forming spinel magnesite regardless of quantity, steady deformation occurred up to 1400 C. However, at 1500 C the rate of deformation was conspicuously accelerated. Steady deformation began at the same temperature in $MgO \cdot 2TiO_2$, $MgO \cdot TiO$ and $2MgO \cdot TiO_2$ specimens and at 1400 C when these additives were introduced in small quantities. Unlike other specimens, $Al_2O_3 \cdot TiO_2$, TiO_2 and $ZrO_2 \cdot TiO_2$ underwent appreciable deformation at 1300 and 1400 C, respectively. A temperature increase to 1400 and 1500 C, respectively, accelerated initial deformation by 100-200% but steady deformation was absent. Tempera-

formation rate increased. It is noteworthy that there is an inverse relationship between the changes in the inital deformation rate and the steady rate. Both initial and steady deformation rates were increased by additives having a low MgO

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L 27822-65

ACCESSION NR: AP5002925

to SiO_2 ratio. This effect is attributed to the effect of the state of precipitated alumina as it forms during the reaction of a given additive with the corundum, as well as to the effect of the quantity of additive. Orig. art. has: 13 figures and 4 tables.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian refractories scientific research institute)

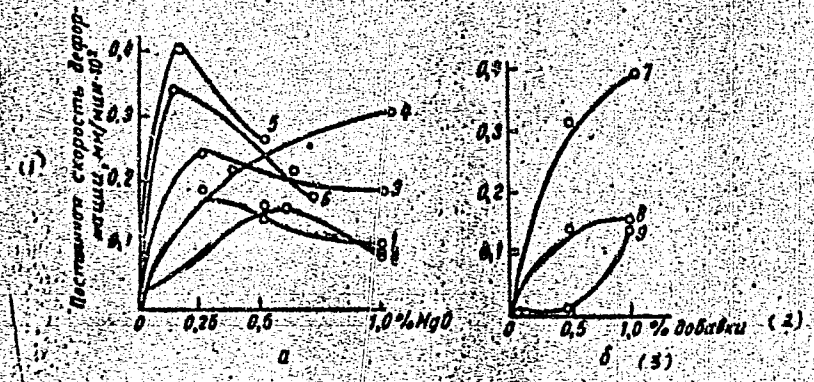
SUBMITTED: 00 ENCL: 01 SUB CODE: MT

NO REF SOV: 014 OTHER: 002

Card 3/5

L 27822-65

ACCESSION NR: AP5002925 ENCLOSURE: 01



Card 4/5

L 27822-65

ACCESSION NR: AP5002925 ENCLOSURE: 02

Figure 1. Effect of the additive content on the steady deformation rate in alumina specimens:
(a) (1) magnesium spinel; (2) forsterite; (3) synthetic talc; (4) natural talc; (5) cordierite; (6) magnesium titanate "M$_2$T"; (b) (7) zirconium titanate; (8) zirconium oxide; (9) magnesium

(1) steady rate of deformation, mm/min $\cdot 10^2$
(2) additives
(3) b

Card 5/5

L 65213-65 EWP(e)/EPA(s)-2/EWT(m)/EWP(1)/EPA(w)-2/EWP(b) WH

ACCESSION NR: AP5013254 UR/0226/65/000/005/0082/0086

AUTHOR: Kaynarskiy, I. S.; Orlova, I. G.; Degtyareva, E. V.

TITLE: Deformation and shrinkage of corundum during sintering

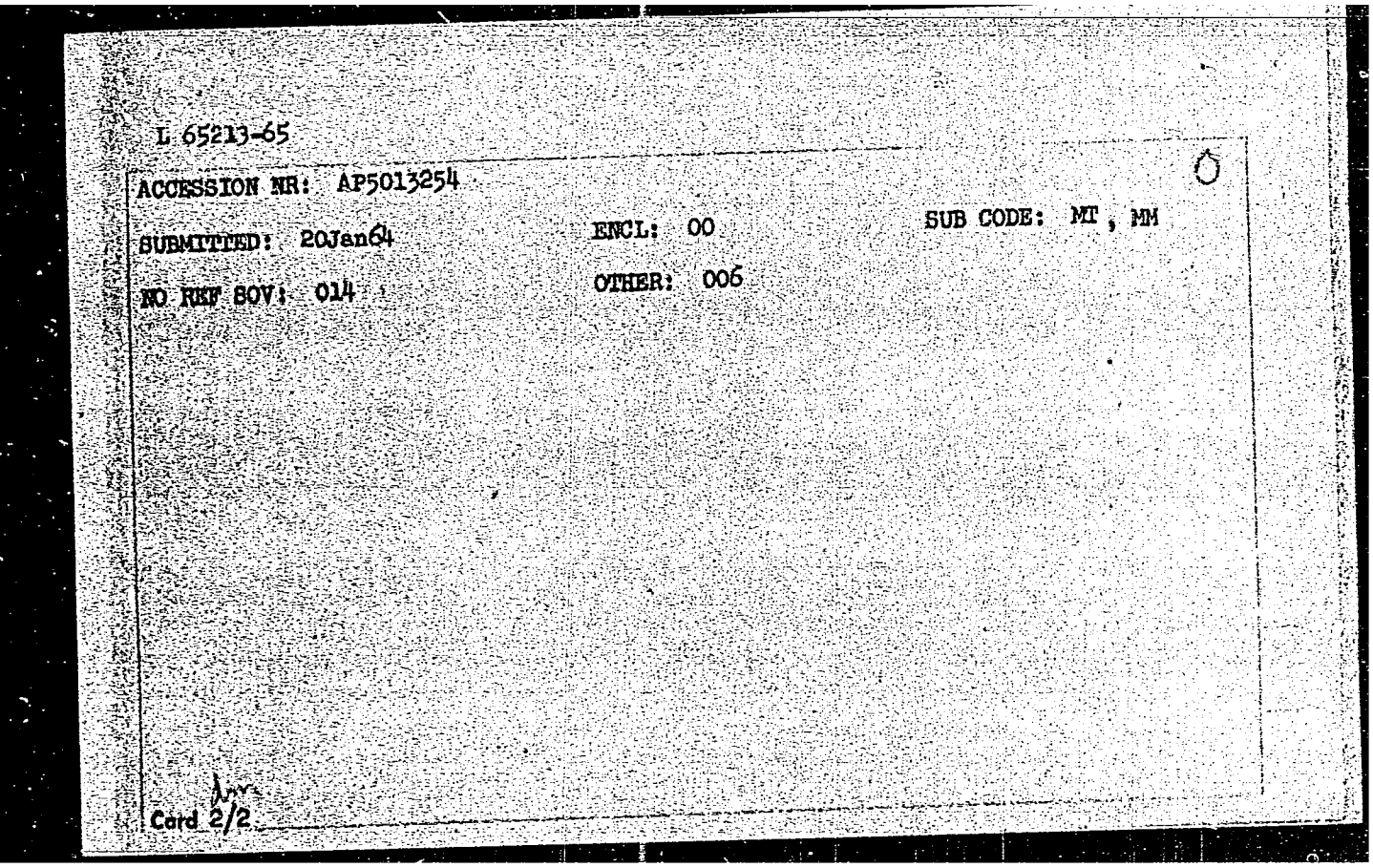
SOURCE: Poroshkovaya metallurgiya, no. 5, 1965, 82-86

TOPIC TAGS: corundum shrinkage, corundum deformation, corundum sintering

ABSTRACT: The authors consider the kinetic deformation and shrinkage curves during sintering (at temperatures of 1200-1500°C) of aluminum based corundum samples with introduced additives. A nonlinear interrelation was established between the deformation and the shrinkage in the case of considerable sintering. It is shown that nonlinearity is due to the development of a stream with a constant rate. At the same time a preliminary thermal treatment of the samples with subsequent heating at a temperature 100°C higher decreases and eliminates development of a stream with a constant rate. As a result the interrelation of the deformation and shrinkage of the samples under conditions of such sintering becomes linear in the course of the entire period of sintering. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov, g. Khar'kov (Ukrainian Scientific Research Institute for Refractory Materials)

Card 1/2



L 65213-65

ACCESSION NR: AP5013254

SUBMITTED: 20Jan64 ENCL: 00 SUB CODE: MT, MM

NO REF SOV: 014 OTHER: 006

Card 2/2

L 59371-65 EWP(e)/EPA(s)-2/EWT(m)/EWP(i)/EPA(w)-2/EWP(b) Pab-10/Pt-7 WH

ACCESSION NR: AP5016599 UR/0363/65/001/005/0804/0809

666.3:539.4

37
35

AUTHOR: Orlova, I. G.; Kaynarskiy, I. S.; Prokopenko, M. I.

TITLE: Effect of modifiers on the strength of corundum ceramics

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 5, 1965, 804-809

TOPIC TAGS: corundum ceramic, ceramic additive, ceramic strength, oxide modifier, talc, magnesia spinel, corundum porosity

ABSTRACT: Samples of ceramics (98.9-99.8% Al_2O_3) to which various modifiers were added (magnesium, zirconium and aluminum titanates; titanium and zirconium oxide; talc) were prepared by slip casting in gypsum plaster molds and firing for 6 hr. at 1750C. It was shown that the strength of the polycrystalline ceramics increases upon addition of magnesium-containing modifiers which, by reacting with Al_2O_3 during the firing, form a magnesia spinel. However, the strength of the ceramics decreases with rising content of the silica introduced [illegible] that the marked decrease in strength observed in

of silica-rich magnesium-containing modifiers is due to the formation of a closed

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L 59371-65

ACCESSION NR: AP5016599

2

porosity. It is concluded that the strength of corundum ceramics with magnesium-containing additives is promoted by fine crystallization of corundum, caused by the crystal-growth-retarding effect of the forming spinel, and that this strength is adversely affected by the separation of silica, which prevents the ceramic from becoming sufficiently dense. A relationship between the bending strength of corundum ceramics having no open porosity (with a density 95-97% of theoretical) and the average size of the corundum crystals was derived. "The petrographic studies were carried out by Prof. L. I. Karyakin." Orig. art. has: 6 figures, 5 formulas and 5 tables.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov, Khar'kov (Ukrainian Scientific Research Institute of Refractories)

SUBMITTED: 30Oct64 ENCL: 00 SUB CODE: MT

NO REF SOV: 009 OTHER: 004

Card 2/2

KAYNARSKIY, I.S.; ORLOVA, [illegible]; PROKOPENKO, M.I.

Connection between losses during the calcining of alumina and the strength of raw brick during heating. Ogneupory 30 no.10:37-39 '65. (MIRA 18:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.

L 3906-66

ACCESSION NR: AP5023547 UR/0220/65/034/004/0602/0610
576.8.095

AUTHOR: Shaposhnikov, V. N.; Orlova, I. G. B

TITLE: Effect of organic acids on the growth of *Pseudomonas liquefaciens* and the synthesis of free intracellular amino acids

SOURCE: Mikrobiologiya, v. 34, no. 4, 1965, 602-610

TOPIC TAGS: microbiology, amino acid, bacteria, biochemistry, carbon, organic acid

ABSTRACT: The purpose of the work was to study the growth of *Pseudomonas liquefaciens* on media containing organic acids as the sole source of carbon and energy and to elucidate the effect of these acids on the synthesis of free intracellular amino acids in the course of cultural growth. This microorganism was found to be capable of utilizing organic acids as the sole source of carbon and energy; media containing combinations of lactic-and-malic or succinic-and-pyruvic acids were the most favorable for the growth of these bacteria. The growth of *Ps. liquefaciens* on organic acids is accompanied by a release of other organic acids, e. g., α-keto-

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L 3906-66

ACCESSION NR: AP5023547

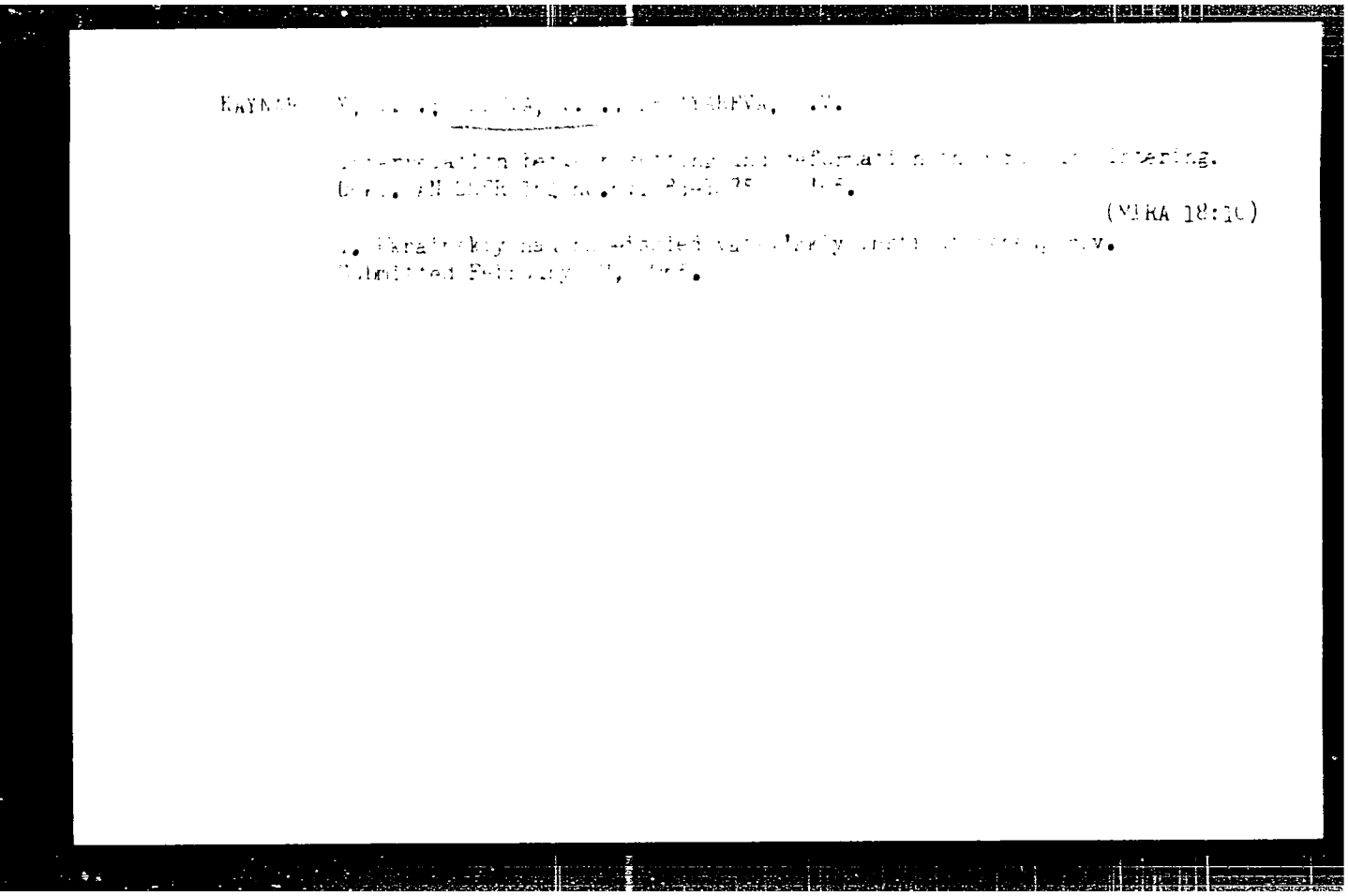
glutaric and fumaric acids. The authors also studied the dynamics of α-amino nitrogen in *Ps. liquefaciens* on media with various combinations of organic acids. Maximum accumulation of free intracellular amino acids coincided with maximum accumulation of the biomass. The addition of lactic and malic acids to the medium increased the α-amino acid content of the cells 1.5-2-fold. The amount of amino acids varied with the carbon source used. Orig. art. has: 6 figures, 1 table.

ASSOCIATION: Institut mikrobiologii AN SSSR (Institute of Microbiology, AN SSSR)

SUBMITTED: 02Feb65 ENCL: 00 SUB CODE: LS, OC, GC

NO REF SOV: 012 OTHER: 026

Card 2/2



ORLOVA, I.G.

Deformation mechanism during heating of unfired corundum ceramics. Dokl. AN SSSR 165 no.2:387-390 N '65.
(MIRA 18:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
Submitted April 9, 1965.

L 15400-66 EWP(e)/EWT(m)/EWP(b) WH

ACC NR: AP5027227 SOURCE CODE: UR/0020/65/164/006/1283/1285

AUTHOR: Kaynarskiy, I. S.; Orlova, I. G.; Degtyareva, E. V.

ORG: Ukrainian Scientific-Research Institute of Refractory Materials (Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov)

TITLE: The interdependence between shrinkage and deformation during the sintering of corundum

SOURCE: AN SSSR. Doklady, v. 164, no. 6, 1965, 1283-1285

TOPIC TAGS: corundum refractory, sintering, material deformation

ABSTRACT: The sintering of metal powders proceeds by means of diffusion creep or "viscous" flow caused by the action of capillary forces across the surfaces of the internal pores of the material. The present investigation established that shrinkage and deformation (due to gravitational pull) during the sintering of corundum samples proceed according to a pattern which confirms the diffusion mechanism of these processes. Basic results are summarized in Figures 1 through 4 of the article.

Card 1/5 UDC: 536.421.5+539.37: 666.76

L 15400-66
ACC NR: AP5027227

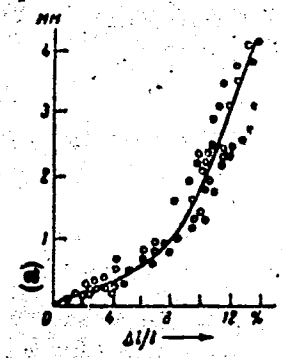


Fig. 1 Linear shrinkage versus deformation of corundum samples during isothermal sintering for 6 hr at 1300 — 1500C. a - deformation, mm.

Card 2/5

8

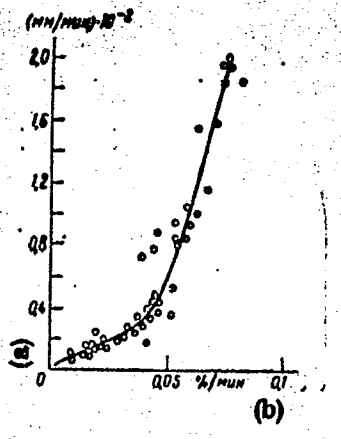


Fig. 2 Initial shrinkage rate versus the deformation of corundum samples during isothermal sintering at 1200 — 1500C. a - initial deformation rate; b - initial shrinkage rate.

L 15400-66

ACC NR: AP5027227

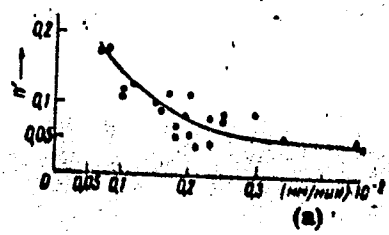


Fig. 3 Shrinkage rate versus a constant deformation rate during the second phase of isothermal heating at 1500C. a - constant deformation rate, (mm/min). 10^{-2}

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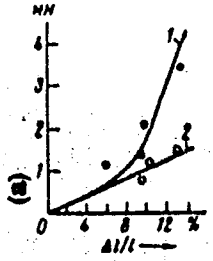

Fig. 4 Shrinkage versus deformation during isothermal sintering of corundum nonequilibrated samples (1) and those brought closer to equilibrium by preliminary annealing (2). a - deformation

The paper was presented by Academician N. V. Belov, 27 Feb 65. Orig. art. has: 4 figures and 1 table.

SUB CODE: 11 / SUBM DATE: 25Feb64 / ORIG REF: 004 / OTH REF: 001

Card 5/5

L 22646-66 EWP(e)/EWT(m)/T/EWP(t)/EWP(k) JD/WH

ACC NR: AP6008690 SOURCE CODE: UR/0131/65/000/011/0027/0032

AUTHOR: Kaynarskiy, I. S.; Degtyareva, E. V.; Orlova, I. G.; Karaulov, A. G.; Gnatyuk, G. Ye.

ORG: Ukrainian Scientific Research Institute of Refractories (Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov)

TITLE: The effect of gamma-Al_2O_3 admixture on the properties of alumina slips, sintering, hardening in annealing, and properties of corundum products

SOURCE: Ogneupory, no. 11, 1965, 27-32

TOPIC TAGS: alumina, corundum, aluminum oxide, corundum ceramic

ABSTRACT: The effect of γ-Al_2O_3 on various properties of slips, on the behavior of castings during annealing, and on the properties of sintered products was studied. The introduction of γ-Al_2O_3 increases the zeta-potential. Recrystallization of active γ-Al_2O_3 at low temperatures followed by conversion of γ-Al_2O_3 to α-Al_2O_3 causes a substantial increase in the strength of the castings in the heated state in the 600-1300°C range as compared to strength of castings without γ-Al_2O_3. The latter decreases the size of corundum crystals in the sintered body, and this raises the strength of corundum ceramics to which MgO had not been added. Shrinkage in castings containing γ-Al_2O_3 becomes more pronounced during annealing and an anisotropy of shrinkage is ob-

UDC: 666.76.022.38

Card 1/2

L 22646-66
ACC NR: AP6008690

served. Addition of γ-Al_2O_3 slows down the sintering at about 1500°C; at higher temperatures, the degree of sintering of the castings is only slightly less. Introduction of γ-Al_2O_3 reduces the distortion of alumina castings up to 1450-1470°C but increases it at higher temperatures. The main advantage of γ-Al_2O_3 is that no binder (such as sucrose, flour, etc.) is needed in the slip, and a considerable strengthening of the heated raw material is obtained. It is desirable to use the γ-Al_2O_3 admixture together with MgO; the latter causes a substantial reduction of open porosity and an increase in the strength of the ceramic. Orig. art. has: 14 figures, 2 tables.

SUB CODE: 11/ SUBM DATE: 00/ ORIG REF: 008/ OTH REF: 000

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KAYNARSKIY, I.S.; ORLOVA, I.G.; PROKOPENKO, M.I.; NATSENKO, A.I.

Hardening of a raw corundum brick during firing. Ogneupory 30 no.12:28-33 '65. (MIRA 18:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.

L 28349-66 EWT(m)/EWP(e) WH/WW

ACC NR: AP5028285 SOURCE CODE: UR/0020/65/165/002/0387/0390

44
B

AUTHOR: Orlova, I. G.

ORG: Ukrainian Scientific Research Institute for Refractories (Ukrainskiy nauchnoissledovatel'skiy institut ogneuporov)

TITLE: Mechanism of deformation during heating of unfired corundum ceramics

SOURCE: AN SSSR. Doklady, v. 165, no. 2, 1965, 387-390

TOPIC TAGS: cermet product, heat effect, corundum, aluminum compound, magnesium compound

ABSTRACT: Samples of various composition differing from each other by the presence or absence of the active solid phase γ-Al_2O_3 and an addition of MgO were prestressed (≤ 230 g/mm^2) for 15 minutes at temperatures of 1300-1600C to prevent their disintegration during loading and then subjected to isothermal deformation (ε) at stresses (σ) of 200-2300 g/mm^2 and 1300, 1400, 1500, 1600C. The curves $\log \varepsilon - \log \sigma$ were plotted from experimental data. The slope of the curve $\log \varepsilon - \log \sigma$ was nearly 1: $\varepsilon \sim \sigma^{n=1}$. This indicated that the deformation

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of corundum in the ranges of temperatures and stresses studied was controlled by the diffusion mechanism. At greater stresses the linear relationship between $\dot{\varepsilon}$ and σ changed to exponential. The transition between the linear and the exponential dependencies of $\dot{\varepsilon}$ on σ occurred at σ, decreasing with increased temperature of isothermal heating. At 1300C and 1400C it depended on the amount of MgO, even in the samples containing γ-Al_2O_3. The energy of creep activation (deformation with constant rate) E was calculated from data on the effect of temperature on deformation. The E of the samples containing no MgO was higher (98 in the sample containing α-Al_2O_3 only and 92 kcal/mole in the sample containing 10% γ-Al_2O_3) than in samples containing MgO (45 and 52 kcal mole, respectively) even in very small amounts (0.1-0.2%). A similar effect of MgO but with a much higher E (130 kcal/mol) was observed by S. I. Warshaw et al. (Am. Ceram. Soc., 45, 10, 1962) during a study of the creep of fine-grained fired corundum ceramics. The diffusion coefficient of Al^{3+} and O^{-} were interpreted from the apparent diffusion coefficient D determined by B. Ya. Pines, formula (Usp. fiz. nauk, 52, v. 4, 1954). At temperatures from 1300 to 1600C it changed correspondingly from $\sim 5 \cdot 10^{-12}$-$2.5 \cdot 10^{-11}$ to $\sim 2 \cdot 10^{-10}$ $cm^2 \cdot sec^{-1}$. At 1300C the diffusion coefficient of ceramics containing no MgO was noticeably lower. The effect of MgO was not observed at temperatures > 1600C. The regular proportional character in changes of the constant rate of deformation of unfired ceramics at 1300-1600C with changing stress, the data

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on the values of the energy of activation of deformation, and the fact that the deformations studied followed the laws typical of cermet compacts, are all sufficient to prove the diffusion mechanism of deformation during heating of unfired corundum ceramics. The article was presented by Academician N. V. Belov, April 9, 1965. Orig. art. has: 2 fig. and 1 table.

SUB CODE: 20,11/ SUBM DATE: 15Mar65/ ORIG REF: 011/ OTH REF: 011

Card 3/3 CC

L 36872-66 EWP(e)/EWT(m)/EWP(t)/ETI IJP(c) JD/WH

ACC NR: AP6019872 (A) SOURCE CODE: UR/0131/66/000/002/0045/0051

AUTHOR: Kaynarskiy, I. S.; Degtyareva, E. V.; Orlova, I. G.; Karaulov, A. G.

ORG: Ukrainian Scientific Research Institute of Refractories (Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov)

TITLE: Effect of the method of vibratory milling of alumina on the properties of slips, sintering and hardening of castings during firing, and properties of corundum articles

SOURCE: Ogneupory, no. 2, 1966, 45-51

TOPIC TAGS: alumina, corundum, sintering

ABSTRACT: The study involved technical-grade alumina G-00 prefired at 1550, 1650, and 1750°C, then ground in a vibratory mill with steel balls for 2-10 hr by the dry and wet methods until about 80% of the grains were less than 3μ in size. The milling lasted from 2 to 10 hr. The use of the wet method of vibratory milling for the preparation of corundum ceramics was found to increase the zeta potential, viscosity, and kinetic stability of the slip. The strength of dried castings obtained by the wet method is much higher than that of castings obtained by the dry method. Wet vibratory milling causes a substantial hydration of the grain surface, and subsequent dehydration during heating causes a decrease in the strength of the heated casting; this decrease is much greater than that of a dry-milled casting. Wet-milled castings

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ACC NR: AP6019872

undergo a substantially greater shrinkage and deformation under their own weight than do dry-milled ones. The anisotropy of shrinking of the latter is much lower. The use of dry vibratory milling insures the formation of a sintered body of higher density and a smaller size of/corundum crystals. The mechanical and dielectric properties of corundum ceramics are much higher in articles prepared by dry vibratory milling as compared to wet-milled articles. Orig. art. has: 8 figures and 6 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 002

Card 2/2 mlp

L 07910-67 EWP(e)/EWT(m) WH

ACC NR: AP6032295 (A) SOURCE CODE: UR/0226/66/000/009/0028/0036 33 B

AUTHOR: Kaynarskiy, I. S.; Prokopenko, M. I.; Orlova, I. G.

ORG: Ukrainian Scientific Research Institute of Refractories (Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov)

TITLE: Investigation of compaction in hot pressing of magnesium oxide with additions

SOURCE: Poroshkovaya metallurgiya, no. 9, 1966, 28-36

TOPIC TAGS: magnesium oxide, porosity, high temperature effect, compaction, pressing, not pressing

ABSTRACT: The authors have investigated the compaction of two types of magnesium oxide in the presence of some additives in hot pressing of samples at temperatures between 1400 and 1900C. It is shown that the compaction kinetics and the kinetics of growth of the poreless "crust" in periclase crystals are proportional to $t^{\frac{1}{3}}$ during the last stages of pressing when any intergranular porosity is eliminated. The diffusion mechanism of compaction during the last stage of hot

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ACC NR: AP7005513 (A) SOURCE CODE: UR/0131/66/000/011/0038/0046

AUTHOR: Orlova, L. G.; Kaynarskiy, I. S.; Mirkina, R. Ye.

ORG: Ukrainian Scientific Research Institute of Refractories (Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov)

TITLE: Investigation of deformation during the sintering of finely ground magnesian spinel and its mixture with alumina

SOURCE: Ogneupory, no. 11, 1966, 38-46

TOPIC TAGS: magnesian spinel, refractory product, magnesium oxide, alumina, material deformation, sintering

ABSTRACT: The sintering of finely ground mixtures of magnesium oxide and alumina leads to the synthesis of magnesian spinel and, if there is an excess of alumina in the mixture, to the formation of solid solutions of alumina in the spinel and is always accompanied by some deformation due to natural gravity, particularly when sintering large specimens. The deformation of spinel under isothermal conditions is, like the shrinkage and deformation of corundum during sintering, proportional to $\sqrt{t}$, where t is the duration of isothermal exposure.

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ACC NR: AP7005513

The kinetics of deformation at up to 1500°C is investigated for specimens of mixtures of fine-grained magnesian spinels with α-Al_2O_3 and γ-Al_2O_3 with the spinel-to-alumina ratios 3:7, 1:1, 7:3, synthesized at various temperatures (1200-1750°C), and it is established that the deformation of mixtures of spinel and α-Al_2O_3 is low and generally follows a consistent pattern similar to that of the deformation of specimens of 100% spinel. In specimens of mixtures of spinel and γ-Al_2O_3 the concentration dependence of the deformation has a minimum when the γ-Al_2O_3 content is 30%. In these mixtures the concentration of solid solutions is identical (31-35 mol.%) and close to its limit at 1500°C. For the specimens of spinel with α-Al_2O_3 that had been synthesized at 1750°C it is established that the addition of 1% alumina somewhat enhances deformation, but as the alumina content is further increased the deformation decreases until it resembles the deformation of specimens of 100% corundum; in this system free corundum occurs only if more than 30 wt.% of γ-Al_2O_3 is added to the original mass, as otherwise the alumina completely enters the solid solution -- and in this region deformation decreases in inverse proportion to the increase in the concentration of solid solutions. Thus, sintering of finegrained spinel ceramics is accompanied by extensive diffusion deformation, which normally exceeds the deformation of corundum ceramics. The addition of corundum to spinels with high deformation makes it possible to markedly reduce the extent of this deformation,

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owing to the formation of solid solutions of corundum in the spinel, particularly when the structure of the added corundum is macrograined. Orig. art. has: 11 figures, 3 tables.

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