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MINERALA, I. K. BARIKH, I. Ya. Altrashank

Artyoz (Khalovs Rakhovs Inst.)

KRYLOV, A. YA.

Krylov, A. Ya. - N. V. Baranovskaya, Yu. I. Silin - The Determination of Age by Means of the Argon Method of Sedimentary Rocks.

The Sixth Session of the Committee for Determining the Absolute Age of Geologic Formations at the Department of Geologic-Geographical Sciences (OGGN) of the USSR Academy of Sciences at Sverdlovsk in May 1957

FRYLOV, A. Ya.

"About the Employment of the Argon Method In Weathered Sedimentary Rocks."

report presented at the 7th Session of the Commission for Determination of the Absolute Age of Geological Formations, at the Dept. Geological-Geographical Sciences, AS USSR, Moscow, 8-12 May 1958.

AUTHOR: Krylov, A. Ya.

7-58-3-2/15

TITLE: Radioactivity of Various Rock Complexes of the Terskey Ala-Tau Range (Radioaktivnost' razlichnykh kompleksov porod khrebt Terskey Ala-Tau)

PERIODICAL: Geokhimiya, 1958, Nr 3, pp. 19-196. (USSR)

ABSTRACT: The rocks of the investigated region can be subdivided into three great complexes: 1) Metamorphic rocks of Proterozoic and Lower Paleozoic era; they are intruded in the Caledonian intrusion and apparently displaced or assimilated by the latter to a certain degree (symbol M). 2) Caledonian intrusions of granitoids; by these the geochemical conditions of this region were changed fundamentally; they comprise more than 50% of the Tsentral'nyy Tyan'-Shan'. This group is subdivided into two intrusions (γ_2^2 and γ_2^3). 3) Cenozoic deposits, especially in the basin of the Issyk-Kul' (Kz). The two Caledonian intrusions are shortly characterized. For each complex average samples were produced from a greater number of stages; uranium and thorium were analyzed radiochemically; potassium by means of the dipicryl aminate method by Z.Ya.Kolker. The analysis was carried out

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Terskey Ala-Tau Range

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totally four times by two different analysts, A.M. Maricheva and O.P. Korn. Complete analyses which had been carried out in the All-Union Scientific and Research Institute of Geology (Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut) and in the Kirghiz Geological Institute (Kirgizskoye Geolupravleniye) are given for the characterization of the rock groups. The following final conclusions can be drawn: 1) A considerable quantity of radioelements was introduced with the granite intrusion: uranium, thorium, and potassium. 2) Granites of the second Caledonian intrusion (alaskaite granites) contain considerably more radioactive elements than the granites of the first main intrusion (porphyry-like granites and granodiorites). 3) The variation coefficients (v) of the contents of investigated radioelements are comparable for all complexes and elements; certain rules can, however, be found: a) In sedimentation rocks v is usually higher (except v for thorium in M). b) In the granites of the second section v for uranium and thorium is considerably higher than in the granites of the first phase. 4) The intruded rocks (M) and the granites of the first intrusion differ to a great extent in their chemical composition. 5) The

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chemical composition and radioactivity of the Cenozoic deposits (C) lies approximatively in the middle between the rocks of the metamorphic series and the granites. 6) According to results so far available the given rules and the concentration of the investigated elements apply approximatively to a greater region of the Tyan'-Shan'. The work was carried out in the laboratory of I.Ye. Starik. There are 4 tables and 9 references, 9 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V.G.Khlopina, AN SSSR, Leningrad (Leningrad, Institute of Radiux imeni V.G.Khlopina, AS USSR)
SUBMITTED: December 20, 1957

1. Rock--- Geology
2. Rock---Chemical analysis
3. Rock--- Radioactivity

Card 3/3

KRYLOV, A.Ya.; SHAPS, H.M.

Certain regularities in the migration of uranium in waters
of northwestern U.S.S.R. Trudy Radiofiz. Inst. AN SSSR. 8:262-273
'58. (MIRA 12:2)

(Uranium)

2(0)

NOV/20-122-5-59/56

AUTHORS:

Krylov, A. Ya., Silin, Yu. I.

TITLE:

The Age of the Metamorphism of the Ancient Sediments of the Northern Zone of Tyan'-Shan' (Vremya metamorfizma drevnikh otlozheniy severnoy zony Tyan'-Shanya)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 1, pp 889-891 (USSR)

ABSTRACT:

If the age of a rock is determined by means of the Argon Method, the age of the crystallization of potassium minerals is established. The same holds true for determining the age of new potassium minerals, primarily feldspar and mica, in a metamorphic rock. If the metamorphism was complete and encompassed a large region, it must be possible to determine the age of the metamorphism of the rock (its "metamorphic level") by the Argon Method. V. I. Vernadskiy has proclaimed that the determination of the "metamorphic level" in the oldest cross-section of the earth's crust is of great significance (Refs 1,2). One of the most interesting regions for determination of metamorphic time relations is Srednyaya Aziya (Middle Asia) (Ref 9). In this area a series of superimposed tectonic structures have

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007.20-1/2-5-59/56
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Tyan'-Shan'

been produced. The authors have studied a wealth of material from the metamorphic rocks of Northern Tyan'-Shan' in order to determine ages. In this area there are 3 clearly defined intrusive cycles with the ages of 500, 440, and 260 million years, respectively (Ref 4). Through study of age determinations of the metamorphic rocks, the authors arrive at the following conclusions: 1) The ages of an overwhelming majority of rocks in the Northern Tyan'-Shan' correspond approximately to the ages of the Caledonian granitoid rocks: 440-460 million years. 2) The old Proterozoic (possibly also Archean) rocks were metamorphosed to gneisses of the uniform composition during Caledonian time. At the same time most of the Lower Paleozoic rocks were made into schists and hornstones (rarely gneiss). 3) The granitoids of the first intrusive cycle (500 million years in age) were not significantly metamorphosed during later folding. 4) The Hercynian and Alpine orogenys have produced no discernible metamorphism in this region. 5) However, two age determinations from the southern zone (Famir, sent by B. I. Sacherbakov) were of Alpine age. This zone requires special

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study. 6) The Argon Method gives rather consistent results and may be used to determine "metamorphic levels" in time. The paper was carried out at the laboratory by I. Ye. Starik, who also took part in this work. There are 1 table and 9 **Soviet references.**

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR
(Basin Institute imeni V. G. Khlopina of the Academy of
Sciences USSR)

PRESENTED: May 24, 1958, by D. I. Shcherbakov, Academician

SUBMITTED: May 17, 1958

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3(8)

AUTHORS: Krylov, A. Ya., Atrashenok, L. Ya. SOV/7-59-3-5/13

TITLE: On the Forms of the Occurrence of Uranium in Granites (O formakh nakhozhdeniya urana v granitakh)

PERIODICAL: Geokhimiya, 1959, Nr 3, pp 246-251 (USSR)

ABSTRACT: For the purpose of obtaining data concerning the form in which uranium occurs, samples of rocks and minerals were leached out for five days with a 0.2 N solution of Na_2CO_3 . Five groups of metamorphosed granite from the Tyan'-Shan' (Table 1) were investigated. Table 2 shows the results obtained with individual rock-forming and accessory minerals. Minerals from pegmatite seams which also contain uraninite show individual behavior (Table 3). The following is, on the whole, found: 1. monazite, zirconium, sphene, fluorite, and orphite during leaching-out give off only a small part of their uranium. 2. Quartz and feldspar give off a larger part of their uranium content only if also uraninite occurs in the rock. 3. The largest quantity of uranium is leached out of magnetite. A second leaching-out in all cases resulted in considerably lower values. In conclusion it may be said that uranium occurs in granites as an

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oxide, a secondary mineral, or as an adsorbed compound. The authors thank I. Yo. Starik for his advice and assistance. There are 3 tables and 10 Soviet references.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina AN SSSR, Leningrad
(Radium Institute imeni V. G. Khlopin AS USSR Leningrad)

SUBMITTED: October 28, 1957

Card 2/2

KRYLOV, A. YA.

1(5)
Abstracts

TITLE:

Baranov, V. I., Kozlov, E. G. SOV'7-59-6-14/17
Chronicle. The VIII Session of the Commission for the Determination of the Absolute Age of Geological Formations (at the Obukhovskiy Geology-geographical Institute named after G. V. Pliginskii) (Department of Geological-geographical Sciences AS USSR), May 18 - 22, 1959, Moscow

PERIODICAL:
Abstracts

Geologiya, 1959, No. 6, pp. 56/ - 56/ (252)
The 8th regular session of the Commission for the Determination of the Absolute Age of Geological Formations was held in Moscow from May 18 to May 22, 1959. The Scientific Committee, headed by V. I. Baranov, and the Scientific Secretariat (Institute of Geology and Mineralogical Chemistry named after G. V. Pliginskii) in the most important parts of the USSR, which are to be presented to the 11th International Geological Congress. The following reports are concerned:

A. V. Pukhov, E. E. Gering, Problems of the absolute age of the Precambrian of the Kuznetsk Basin.
A. P. Vinogradov, E. V. Amelin, A. I. Rykhting, The absolute age of the Svirskaya crystalline shield.

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P. P. Semakova, Ye. S. Burster, and E. E. Ivanitskii, Age groups of the mineralization of the rocks of the Urals and their absolute age.
A. P. Vinogradov, A. I. Gering, E. E. Kozlov, and Ye. Ye. Rykhting, The absolute age of the Precambrian of the Kuznetsk Basin. The age of the Precambrian rocks of the crystalline basement of the Russian Platform.
I. Ye. Lash, A. Ye. Kravtsov, E. E. Kozlov, Ye. Ye. Lash, The absolute age of the rocks of the western part of the Atlantic continent.

A. Ye. Kravtsov, The absolute age of the rocks of the Tsentral'-nyy Ural'skii Massif and the employment of the argon method for metamorphic and sedimentary rocks.
G. Z. Afanasyev, Results of the geochronology of the Caucasus.

L. P. Orskanaber and E. A. Gerasimov, Age of the geological formations of the Kuznetsk Basin (USSR).
E. A. Gerasimov and E. A. Gering, The absolute age of the Precambrian of the Kuznetsk Basin (USSR).
L. P. Orskanaber and E. A. Gering, Absolute age of the rocks of the (Soviet) Far East.

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Ye. Ye. Lash, Absolute age of the granite intrusions of the Kuznetsk Basin.
The research work of a number of laboratories, IZM, GIKhM, LAGP, etc., was discussed. Great attention was paid to the work of E. E. Gering, Ye. A. Gering, and others, who have made contributions to the geochronology of the rocks of the Kuznetsk Basin. The comprehensive research work carried out in the USSR and in the USSR Academy of Sciences of the USSR (Laboratory of Age Determination) and the application of isotopic dilution and other methods for the determination of the age of sedimentary rocks was discussed. The determination of the age of sedimentary rocks such as boulders, sands, sandstones, slates, and shales.

A. I. Zhuravlyov and E. E. Kozlov were the first to attempt to determine the absolute age of sedimentary carbonaceous formations according to isotopic composition of coal.

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3(0)

AUTHORS:

Krylov, A. Ya., Silin, Yu. I.,
Lovtsyus, A. V.

SOV/20-124-3-47/67

TITLE:

The Age of the Granitoids in the Northern Zone of Tyan'-Shan'
(Vozrast granitoidov severnoy zony Tyan'-Shanya)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3, pp 658-660
(USSR)

ABSTRACT:

Previously published argon method determinations of the age of the granitoids in the Northern Zone of Tyan'-Shan' (Refs 2-5) are primarily concerned with the Terskey-Alatau mountain range. Some of these ages were not well enough established because the isotopic composition of the argon was not determined. Today the authors have more data for analysis, which as before concerns the rocks themselves, not nonmineralic fractions. The work was carried out in the laboratory of I. Ye. Starik. A few researchers consider that mica alone is suitable for use in age determinations, for feldspar and granitoids give much too young an age. Although in the granitoids feldspar often surpasses mica in abundance - for example mica is often lacking entirely - hundreds of age determinations have been already made directly from granites

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of the same mountain massifs. The results are as a rule rather close for granites of the same mountain massifs and for granites of the same age from different massifs; the ages are constant and compare well with one another. Table 1 shows ages of rocks determined by the argon method. In northern and central Tyan'-Shan' predominantly Caledonian granitoids (approximately 90 %) occur. Second in abundance are gray, often porphyritic granites and granitoids of Phase 1. The ages of granites of Phase 2 (red alaskite-granites) often lead to a misunderstanding in the age determination. Hercynian granitoids are represented by alaskite-granite, granosyenite, and syenite. Although the specimens analyzed by the authors are not, compared to other work, sufficiently evaluated, they characterize to some extent the main scheme. Above all, the rather close coincidence of ages for the granitoids of each cycle should be stressed. As seen in table 1, the extreme variations of average ages are at most $\pm 10\%$. Most do not exceed this variation by $\pm 3-5\%$. Thus, three intrusive cycles of the northern Tyan'-Shan' Zone can be defined with complete confidence. The granitoids of the same

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Age can be closely enough paralleled with each other in different structural zones. Granites of Cycle 1 ("Proterozoic" or "Salairskiye") were not well enough determined. Data is lacking and also the rocks are somewhat altered. Hence, the age determined is perhaps too young. The ages of granites of the Caledonian cycle - approximately 340 million years - agree well with many age determinations of metamorphic rocks of the same area. There are 1 table and 5 Soviet references.

PRESENTED: August 25, 1958, by D. I. Shoherbakov, Academician

SUBMITTED: July 30, 1958

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3 (5)

AUTHORS:

Starik, I. Ye., Corresponding Member SOV/20-126-1-39/62
AS USSR, Ravich, M. G., Krylov, A. Ya.,
Silin, Yu. I.

TITLE:

On the Absolute Age of the Rocks of the East-Antarctic Platform
(Ob absolyutnom vozraste porod Vostochno-Antarkticheskoy plat-
formy)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 144 - 146
(USSR)

ABSTRACT:

In the present paper the first determination results of the rocks mentioned in the title, mainly of Precambrian age, are discussed. For this purpose the collection of the Sovetskaya antarkticheskaya ekspeditsiya (Soviet Antarctic Expedition) 1956-58 was used. It was collected during the prospecting of a coastal strip of almost 5000 km length (Refs 1,2). The investigated region has the structure of a 3-stage plateau which is in many a respect analogous to the other Godvanskiye platforms. All three stages are characterized in short. No Mesozoic sediments have hitherto been found in the region of the mentioned plateau. Cenozoic sediments are only represented by covers of basic effusives among which leucite basalts predominate. The

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first 40 determinations of the absolute age by means of the argon method made more precise ideas possible concerning the structure of the aforesaid plateau. Several results were surprising and their geological interpretation meets with serious difficulties (Table 1). The highest age, i. e. 1020-1270 million years were obtained at first for the oases Langenaset, Grirson, Banger, and Obruchev, i. e. for leucocratic granites and pegmatites. The age of the weakly migmatitic (Banger oasis and other regions of the crystalline basement) rocks fluctuates between 940 and 1050 million years. So-called poly-migmatites which are 700-730 million years old occur at the same time at several places, especially in the Banger oasis. Thus two migmatitization stages can be separated: a) an earlier one which occurred more than 1000 million years ago, and b) a late one - more than 700 million years ago. Thus the migmatitization of the oldest masses of the eastern Antarctic belongs to the Proterozoic. A packet of gneisses in the region of the Einsvort bay and the Vil'scr. elevation is for the time being the only exception. Weakly migmatitized biotite-gneisses are here 425-485 million years old. This agrees almost with the age of the

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here occurring porphyroblastic granites. The age of the green schists and mica phyllites (middle stage of the plateau) fluctuates between 400 and 500 million years. This corresponds to Sinian and Lower Cambrian. The Rapakivi granites in the extreme east of the investigated region has approximately the same age. The most recent granitoids are the subalkaline biotite-hornblende varieties. They are Caledonian, with an age of 305-315 million years. The age of the gabbro-dolerite from a stratiform intrusion within the Bikon (Beakon) series (170 million years old) agrees rather well with the geological position (Lower Triassic). The same holds in the case of Tertiary leucite-granite (mountain Gauss) which is approximately 20 million years old. The age determinations of the mentioned rocks confirm on the whole the authors' assumption concerning the 3-stage structure of the plateau. The old Gerling constant $\lambda_k = 6.02 \cdot 10^{-11} \text{ year}^{-1}$ which is much used in the USSR was used for the determination. The data are only temporary and probably

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somewhat too low. There are 1 table and 3 Soviet references.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR
(Radium Institute imeni V. G. Khlopin of the Academy of
Sciences, USSR). Nauchno-issledovatel'skiy institut geologii
Arktiki (Scientific Research Institute of the Geology of the
Antarctic)

SUBMITTED: January 19, 1959

Card 4/4

ATRASHENOK, L. Ya.; AVDZEYKO, G.V.; KRYLOV, A. Ya.; SILIN, Yu. I.

Absolute age of the Monastiri type granites of Kalba, Geokhimia
no.3:278-279 '60. (MIRA 14:5)

1. Radiyevyy institut imeni V. G. Khlopina AN SSSR, Leningrad.
(Kalba Range--Granite)
(Geological time)

RAVICH, M.G., doktor geol.-miner.nauk; KRYLOV, A.Ya., nauchnyy sotrudnik

Absolute age of rocks in the region of the Mawson Station. Inform.
biul. Sov. antark. eksp. no.19:8-9 '60. (MIRA 13:9)

1. Nauchno-issledovatel'skiy institut geologii Arktiki i Radiyevyy
institut im.Khlopina.
(Mawson station region, Antarctica—Charnockites)

RAVICH, M.O., doktor geol.-mineral.nauk; KRYLOV, A.Ya., nauchnyy sotrudnik

Absolute age of rocks in the eastern part of the mountains of Queen
Maud Land. Inform. biul. Sov. antark. eksp. no.20:15-17 '60.
(MIRA 13:9)

1. Nauchno-issledovatel'skiy institut geologii Arktiki i Radiyevyy
institut AN.

(Queen Maud Land--Rocks, Igneous)
(Geological time)

KRYLOV, A.Ya.; SILIN, Yu.I.

Using the argon method for determining the age of clastic
sedimentary rocks. Izv.AN SSSR.Ser.geol. 25 no.1:56-66 Ja
'60. (MIRA 13:8)

1. Radiyevyy institut imeni V.G.Khlopina AN SSSR, Leningrad.
(Argon) (Rocks, Sedimentary)

STARIK, I.Ye.; RAVICH, M.G.; KRYLOV, A.Ya.; SILIN, Yu.I.; ATRASHENOK, L.Ya.;
LOVTSYUS, A.V.

Recent data on the absolute age of rocks in eastern Antarctica. Dokl.
AN SSSR 134 no.6:1421-1423 0 '60. (MIRA 13:10)

1. Radiyevyy institut im. V.G.Khlopina Akademii nauk SSSR. 2. Chlen-
korrespondent AN SSSR (for Starik). (Antarctic regions--Rocks) (Geological time)

KRYLOV, A.Ya.; LESITSYN, A.P.; SILIN, Yu.I. [Silina, J.I.]

Significance of the argon - potassium ratio in oceanic silt. Izv.
AN SSSR.Ser.geol. no.3:87-100 Mr '61. (MIRA 15:2)

1. Radiyevyy institut AN SSSR, Leningrad i Institut okeanologii
AN SSSR, Moskva.

(Ocean bottom--Deep-sea deposits)
(Geological time)

STARIK, I.Ye.; KRYLOV, A.Ya.; SILIN, Yu.I.

Absolute age of base rocks in the eastern part of the Russian
Platform. Biul.Kom.po opr.abs.vozr.geol.form. no.4:64-65 '61.
(MIRA 15:1)

(Russian Platform--Rocks, Crystalline and metamorphic)
(Geological time)

STARIK, I.Ye.; BARANOVSKAYA, N.V.; ZHIROVA, V.V.; KRYLOV, A.Ya.

Determining the age of magnetites by the helium method. Biul.
Kcm.po opr.abs.vozr.geol.forn. no.4:151-159 '61. (MIRA 15:1)
(Geological time)
(Magnetites)

VISTELIUS, A.B.; KHYLOV, A.Ya.

Absolute age of the clastic part of sandy silt deposits in the southwestern part of Central Asia. Dokl.AN SSSR 138 no.2:422-425 (MIRA 14;5) My '61.

1. Laboratoriya aerometodov Akademii nauk SSSR i Radiyevyy institut im. V.G.Khlopina Akademii nauk SSSR. Predstavleno akademikom D.V. Nalivkinym.

(Turkmenistan—Geology, Stratigraphic)

KRYLOV, A.Ya.; VORONOV, P.S.; SILIN, Yu.I.

Absolute age of the crystalline basement of eastern Antarctica.
Dokl. AN SSSR 143 no.1:184-187 Mr '62. (MIRA 15:2)

1. Radiyevyy institut im. V.G.Khlopina AN SSSR. Predstavleno
akademikom D.I.Sheherbakovym.
(Antarctic regions--Geology, Stratigraphic)

RAVICH, M. G.; KRYLOV, A. Ya.; SOLOV'YEV, D. S.; SILIN, Yu. I.

Absolute age of rocks of the central part of the mountains in
Queen Maud Land (eastern Antarctica). Dokl. AN SSSR 147 no.6:
1433-1436 D '62. (MIRA 16:1)

1. Nauchno-issledovatel'skiy institut geologii Arktiki i
Radiyevyy institut im. V. G. Khlopina AN SSSR. Predstavleno
akademikom D. I. Shcherbakovym.

(Queen Maud Land--Petrology)

KNYAZEV, V.S.; KRYLOV, A.Ya.; SILIN, Yu.I.; SHNIP, O.A.

Recent data on the age of basement rocks of western Central
Asia. Dokl. AN SSSR 148 no.3:665-667 Ja '63. (MIRA 16:2)

1. Predstavleno akademikom D.I. Shcherbakovym.
(Soviet Central Asia--Rocks, Igneous)

A.Ya. KRYLOV, Yu.I. SILIN. (USSR)

"Argon-method of age determination in marine geology and paleogeography."

Report presented at the Conference on Chemistry of the Earth's Crust,
Moscow, 14-19 Mar 63.

KRYLOV, A. Ya.

Calculating the stressed state of gravity dams on a rock base. Report
No.2. Trudy GISI no.44:6-22 '63. (MIRA 17:11)

AVRASHOV, A.S.; KRYLOV, A.Ya.; SILIN, Yu.I.

New data on the age of granitoid intrusives in the central Pamirs. Dokl. AN SSSR 153 no.5:1136-1139 D '63.

(MIRA 17:1)

1. Predstavleno akademikom D.I. Shcherbakovym.

AFENDUL'YEV, A.A.; PEREKHVATOV, V.K.; SHIVANOV, V.N.; VOLOCHAYEV,
I.A.; KRYLOV, A.Ya.

[Student's manual of calculations and diagrams in structural
mechanics] Posobie dlia studentov po vypolneniiu raschetno-
graficheskikh rabot po stroitel'noi mekhanike. Gor'kii,
Inzhenerno-stroit. in-ta im. V.P.Chkalova. Pt.2. 1964. 196 p.
(MIRA 18:2)

KRYLOV, A.Ya. (Gor'kiy)

Calculating the stressed state of a gravity dam with a large opening. Prykl. mekh. 10 no.3:324-336 '64. (MIRA 17:6)

1. Gor'kovskiy inzhenerno-stroitel'nyy institut.

U

KRASIL'SHCHIKOV, A.A.; KRYLOV, A.Ya.; ALYAPYSHEV, O.A.

Age of certain granitoids and gneisses in the northern part of Spitzbergen. Dokl. AN SSR 199 no.4:796-798 D '64. (MIRA 18:1)

1. Nauchno-issledovatel'skiy institut geologii Arktiki. Predstavleno akademikom D.I.Shcherbakovym.

L 33164-66 ENT(1) G#

ACC NR: AP6014202

(N)

SOURCE CODE: UR/0213/66/006/002/0261/0266

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AUTHOR: Bezrukov, P. L.; Krylov, A. Ya.; Chernysheva, V. I.

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ORG: Institute of Oceanology, AN SSSR (Institut okeanologii AN SSSR); Radium Institute (Radiyevy institut)TITLE: Petrography and the absolute age of the basalts on Indian Ocean floor

SOURCE: Okeanologiya, v. 6, no. 2, 1966, 261-266

TOPIC TAGS: ocean property, oceanographic expedition, oceanographic ship, basalt, ~~ocean floor, geologic age~~, petrography

ABSTRACT: Volcanic rock from the bottom of the Indian Ocean was sampled during the 1959—1962 cruise of the research vessel "Vityaz". Petrographic study of the samples has shown that in the most cases the rocks were olivine and nonolivine basalts and basalt glass (hyalobasalts). Chemical analysis indicated that the part of the samples is low-potassium tholeitic basalt, and the other part is alkaline basalt. The K-argon method was used to determine the absolute age of four rock samples from two stations in the southern part of the Ocean. Their age appeared to be about 60 million yr, corresponding to Lower Paleogene (Eocene). Orig. art. has: 1 figure and 2 tables. [Based on authors' abstract.] [NT]

SUB CODE: 08/ SUBM DATE: 12Jan66/ ORIG REF: 007/ OTH REF: 006/

15

Card 1/1

UDC: 552.2/333.5(267)

ATRASHENOK, L.Ya.; ATRASHENOK, P.V.; AVDZEYKO, G.V.; KRYLOV, A.Ya.;
LOVTSYUS, A.V.

Isotopic composition of lead of the northern Tien Shan. Radiokhimiia
5 no.2:160-164 '63. (MIRA 16:10)

ATRASHENOK, L.Ya.; KRYLOV, A.Ya.

Radioactive equilibrium in rocks of eastern Antarctica.
Radiokhimiia 5 no.2:170-172 '63.

(MIRA 16:10)

KRYLOV, A.Ya.

Evolution of radioactivity and of general chemical composition of
rocks in the Tien Shan northern zone. Radiokhimiya 5 no.2:
173-182 '63. (MIRA 16:10)

87987

9.7000

S/144/60/000/011/001/008
EO31/E255

AUTHORS: Ugodchikov, A. G., Doctor of Technical Sciences and
~~Krylov, A. Ya.~~, Post-graduate Student

TITLE: The Electrical Simulation of the Conformal Trans-
formation of Semi-infinite Domains

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy,
Elektromekhanika, 1960, No. 11, pp. 31-35

TEXT: The problem frequently arises of establishing a
correspondence between the points of the unit circle and the
points of the boundary of some semi-infinite domain S . To do
this it is convenient to transform the domain S with boundary L_0
into an enclosed simply-connected domain S_1 with boundary L_1 by
an inversion. It then remains to find the transformation between
 S_1 and the unit circle. The establishment of a correspondence
between points on the boundary of the circle and those of L_1 , and
the construction of a polynomial giving the conformal mapping of
the circle on to a domain S_1 which is very close to the domain S_1 ,
can be achieved with the aid of electrical simulation (Ref. 2).
However, the function effecting the mapping of the unit circle on
to S' (which is very close to S) can be simplified by the

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S/144/60/000/011/001/008
EO31/E255

The Electrical Simulation of the Conformal Transformation of Semi-infinite Domains

observation that in two-dimensional problems in the theory of elasticity (where the problem under discussion arises most frequently), the boundary L_0 assumes the particular shape that the ends which tend to infinity do so in directions parallel to the real axis. Thus the transformation consists of the sum of a term of the form $C_{-1}/(1 + \xi)$ and a power series in ξ (ξ is the complex variable in the plane of the unit circle). The coefficients of the power series are obtained by putting $\xi = e^{i\theta}$, expressing the coefficients as $\alpha_k + i\beta_k$, and separating the real and imaginary parts. The results of a simple application of the theory are given. There are 2 figures and 4 Soviet references.

ASSOCIATION: Kafedra stroitel'noy mekhaniki, Gor'kovskiy inzhenerno-stroitel'nyy institut (Department of Construction Mechanics, Gor'kiy Construction Engineering Institute)

SUBMITTED: September 19, 1960

Card 2/2

UGODCHIKOV, A.G. (Gor'kiy); KRYLOV, A.Ya. (Gor'kiy)

Calculating stresses near inspection galleries in hydrotechnical
installations. Inzh.zhur. 1 no.4:160-165 '61. (MIRA 15:4)
(Hydraulic engineering)

KRYLOV, A.-YA.; KUZNETSOV, A.M.; SEREBRENNIKOVA, I.I.; USOLCHIKOV, A.G. (Gor'ky)

"On the solution of some plane problems of applied elasticity with the aid of electrical simulation of conformal mapping".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

KRYLOV, B., starshiy nauchnyy sotrudnik

Nonpackaged transportation of cabinet-type furniture. Sov.
torg. 35 no.10:45-47 0 '61. (MIRA 14:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tary i
upakovki.

(Furniture--Packing for shipment)

MIRONOV, S., doktor tekhn. nauk; KRYLOV, D., kand. tekhn. nauk; MUKHA,
V., kand. tekhn. nauk; ABAKUMOV, Yu., inzh.

Improved method of sealing joints of large-panel buildings in
winter. Zhil. stroi. no.9:23-25 '65. (MIRA 18:11)

KRYLOV, B.; SEREGIN, V.

Solution of the problem of peak hours in urban bus service. Avt. transp.
4 no. Bill-13 Ag '62. (MIRA 1614)

1. Orlovskaya avtotransportnaya kontora i Nauchno-issledovatel'skiy
institut avtomobil'nogo transporta.
(Motorbus lines)

KRYLOV. B. A.

KRYLOV. B. A. - "Features of the organization of concrete work under winter conditions using freeze-setting concrete". Moscow, 1955. Min Higher Education USSR. Moscow Order of Labor Red Banner Construction Engineering Inst imeni V. V. Kuybyshev, (Dissertation for the Degree of Candidate of (Technical Sciences)).

SO: Knishnaya Letopis' No. 46, 12 November 1955. Moscow

MIRONOV, S.A., doktor tekhnicheskikh nauk, professor, redaktor; KRYLOV
B.A., kandidat tekhnicheskikh nauk, redaktor; BEGAK, B.A., redaktor
izdatel'stva; PIRSON, M.N., tekhnicheskij redaktor

[Papers delivered at the International Congress on Winter Concreting]
Materialy Mezhdunarodnogo kongressa po zimnemu betonirovaniu. Pod
red. S.A.Mironova i B.A.Krylova. Moskva, Gos.izd-vo lit-ry po
stroit. i arkhit., 1956. 125 p. (MLRA 10:7)

1. Symposium on Theory and Practice of Winter Concreting.
Copenhagen, 1956.
(Concrete construction--Cold weather conditions)

KRYLOV, B.

KRYLOV, B.

Useful manual for rural builders. Sel'.stroi. 12 no.9:3 of cover
S '57. (MIRA 10:10)

(Bibliography--Building)

MIRONOV, S.A., doktor tekhn. nauk; KRYLOV, B.A., kand. tekhn. nauk.

Concrete and reinforced concrete construction under winter conditions. Nov. tekhn. i pered. op. v stroi. 19 no. 12:6-9

D '57.

(MIRA 11:1)

(Concrete construction--Cold weather conditions)

KRYLOV, B.A., kandidat tekhnicheskikh nauk; DANILOV, N.N., kandidat
tekhnicheskikh nauk.

Using concretes with chloride salt additives on the experimental
construction yard of the Kakhovka Hydroelectric Power Station.
Stroi. prom. 35 no.1:33-37 Ja '57. (MLRA 10:2)

1. Moskovskiy inzhenerno-stroitel'nyy institut imeni
V.V. Kuybysheva.
(Kakhovka Hydroelectric Power Station)
(Concrete)

KRYLOV, B. A.

UKHOV, B.S., prof., doktor tekhn.nauk [deceased]; VOROB'YEV, V.A., prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki; YEGOROV, Yu.A., prof., doktor iskusstvovedcheskikh nauk; STRAMENTOV, A.Ye., prof., doktor tekhn.nauk; SIROTKIN, V.P., prof., doktor tekhn.nauk; TOROPOV, A.S., dotsent, kand.tekhn.nauk; KRYLOV, B.A., kand.tekhn.nauk; SHREYBER, A.K., kand.tekhn.nauk; OSMOLOVSKIY, M.S., dotsent, kand.arkhitektury, inzh.-arkhitekto; POGODIN-ALEKSEYEV, G.I., prof., doktor tekhn.nauk, obshchiy red.; NAYMOV, N.A., dotsent, kand.tekhn.nauk, nauchnyy red.; KOKOSHKO, A.G., red.; NAUMOV, K.M., tekhn.red.

[Industrial and residential construction; textbook for higher party schools] Promyshlennoe i grazhdanskoe stroitel'stvo; uchebnoe posobie dlia vysshikh partiinykh shkol. Moskva, 1959. 434 p.

(MIRA 13:2)

1. Kommunisticheskaya partiya Sovetskogo soyuza. Vysshaya partiynaya shkola. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury (for Stramentov). 3. Rukovoditel' kafedry promyshlennogo proizvodstva i stroitel'stva Vysshey partiynoy shkoly pri Tsentral'nom komitete Kommunisticheskoy partii Sovetskogo soyuza (for Pogodin-Alekseyev.)

(Construction industry)

(City planning)

BEREZOVSKIY, B.I., inzh.; KRYLOV, B.A., kand.tekhn.nauk, nauchnyy red.:
SKVORTSOVA, I.P., red.isd-va; BOROVHEV, N.K., tekhn.red.

[Some characteristics of construction under conditions of the
Far North] Nekotorye osobennosti stroitel'stva v usloviakh
Krainego Severa. Moskva, Gos.isd-vo lit-ry po stroit., arkhit.
i stroit.materialam, 1960. 126 p. (MIRA 14:4)
(Russia, Northern--Building--Cold weather conditions)

KEYMAKH, L.I., inzh.; VOLYNTSEV, V.A.; LARIONOV, V.A., retsenzent;
SHELKOVNIKOV, S.G., retsenzent; KYLOV, B.A., kand. tekhn.
nauk, nauchnyy red.; SHIROKOVA, G.M., red.izd-va; BOROVNEV,
N.K., tekhn. red.

[Construction of high reinforced concrete structures] Stroitel'-
stvo vysotnykh zhelezobetonnykh sooruzhenii. Moskva, Gosstroi-
izdat, 1962. 278 p. (MIRA 15:12)
(Reinforced concrete construction)

MIRONOV, S.A., prof.; KRYLOV, B.A., kand.tekhn.nauk; UKHOV, Ye.N., inzh.

Hardening of concrete with an addition of potash in freezing weather. Bet. i zhel.-bet. 8 no.11:483-487 N '62. (MIRA 15:11)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Mironov).

(Concrete construction--Cold weather conditions)
(Potash)

KRYLOV, B.A., kand. tekhn. nauk

Cooling of mortar and concrete during the sealing of
joints in frost. Trudy NIIZHB no.32:123-136 '63.
(MIRA 17:1)

MIRONOV, S.A., doktor tekhn. nauk, prof.) KRYLOV, B.A., kand. tekhn.
nauk

Increase of the strength of concrete during frost and during
its subsequent hardening at above freezing temperatures. Bet.
i zhel.-bet. 9 no.11:495-501 N '63. (MIRA 17:1)

MIRONOV, S.A., doktor tekhn. nauk, prof.; KRYLOV, B.A., kand. tekhn. nauk

Use of gas concrete in Sweden. Stroi. mat. 10 no.2 38-39
F '64. (MIRA 17:6)

KRYLOV, B.A., kand. tekhn. nauk; KOPYLOV, V.D., inzh.

Heat treatment of urbolite. Stroil. mat. 10 no.9:15-17 S 164
(MIRA 18:2)

KRYLOV, B.F.; LEZHNEV, A.P.

Automatic charging of materials on the sintering conveyer belt system. Biul. TSIICHM no.3:36-37 '61. (MIRA 14:12)

1. Cherepovetskiy metallurgicheskiy zavod.
(Sintering--Equipment and supplies)

MASSEN, V.A.; MILOSLAVSKIY, I.L.; PAVLOV, S.P.; POGODILOV, M.H.; SHEVELEV,
A.Ye.; KUNITSA, S.S.; YAKOVLEV, V.G.; CHESNOKOV, V.K.; KRYLOV,
B.F.; SHIKHANOVICH, B.A.; YAITSKOV, S.A.

Proposals awarded prizes at the 16th All-Union Contest for
Electric Power Economies. Prom.energ. 17 no.10:12-14 0
'62. (MIRA 15:9)

(Technological innovations--Competitions)

KRYLOV, B.F., inzh.; LEZHNEV, A.P., inzh.

Voltage regulation in low-power 220-380 volt lines. Prom.
energ. 18 no.5:22 My '63. (MIRA 16:6)

(Electric power distribution)

PARKHOMOVSKIY, I.D.; GRIBANOV, P.F.; LISITSYN, P.P.; KRYLOV, B.G.,
Starshiy nauchnyy sotrudnik

Research Institute of Containers and Packaging starts talking
about containers. Izobr. i rats. no.8:8-10 Ag '61. (MIRA 14:9)

1. Zaveduyushchiy laboratoriyey standartizatsii i normalizatsii
TSentral'nogo nauchno-issledovatel'skogo instituta tary i upakovki
(for Parkhomovskiy). 2. Zaveduyushchiy laboratoriyey tary i
upakovki iz polimernykh i kombinirovannykh materialov TSentral'nogo
nauchno-issledovatel'skogo instituta tary i upakovki (for
Gribanov). 3. Vedushchiy konstruktor Spetsial'nogo konstruk-
torskogo byuro TSentral'nogo nauchno-issledovatel'skogo instituta
tary i upakovki (for Gribanov). 4. Laboratoriya ekonomiki
TSentral'nogo nauchno-issledovatel'skogo instituta tary i upakovki
(for Krylov).

(Containers)

YEGOROV, B. N.; KRYLOV, B. G.

Double melting of tristearin. Zhur. fiz. khim. 37 no. 3:675-
676 Mr '63. (MIRA 17:5)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova.

KRYLOV, B.G.

More economic methods for packing furniture. Der. prom. 10
no.7:15 J1 '61. (MIRA 14:7)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tary i
upakovki.
(Furniture) (Packaging)

KRYLOV, B.G.; MIZINA, I.N., red.; PETRENKO, V.M., tekhn. red.

[Packing of furniture] Upakovka mebeli. Moskva, TSentr.
in-t tekhn. informatsii i ekon. issled. po lesnoi, bumazhnoi
i derevoobrabatyv. promyshl., 1962. 31 p. (MIRA 17:4)

RAVICH, G.B.; YEGOROV, B.N.; KRYLOV, B.G.

Polymorphism of higher monoacid triglycerides studied by means of an volumetric microdilatomer with an automatic recording device. Izv.AN SSSR.Otd.khim.nauk no.3:481-487 Mr '63.

(MIRA 16:4)

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

(Glycerides)

(Polymorphism)

YEGOROV, B.N.; RAVICH, G.B.; KRYLOV, B.G.

Phase transition of the second kind in 2,4,6-trinitrophenol.
Dokl. AN SSSR 152 no.2:370-371 S '63. (MIRA 16:11)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova
AN SSSR. Predstavleno akademikom I.V. Tananayevym.

S/081/63/000/003/005/036
B144/B186

AUTHORS: Krylov, B. K., Kalmanovskiy, V. I.

TITLE: Technique for identifying the results of chromatographic analysis using a mass spectrometer

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1963, 119, abstract 3G34 (Tr. po khimii i khim. tekhnol. (Gor'kiy), no.4, 1961, 747-752)

TEXT: The mass spectrometer M/1305 (MI 1305) (RZhKhim, 1959, no. 5, 15686) was adapted for identifying chromatographically separated components of gaseous mixtures. Mass-spectrometric analysis was conducted by freezing out the fractions as well as by continuously admitting to the mass spectrometer the gases leaving the chromatographic column. In the first case components with a concentration of 0.5 - 1% in the initial mixture could be analyzed, in the second case those with up to 3% concentration. The volume of the sample introduced into the chromatograph was 10 - 30ml. The continuous admission of gases in viscous state was effected using a Cu capillary tube 15 cm in length and 0.3 mm in diameter, to the end of which a glass capillary 10 - 15 mm in length and 0.03 - 0.05 mm in
Card 1/2

Technique for identifying the results ... S/081/63/000/003/005/036
B144/B186

diameter was soldered. Electron patterns are given of the continuous change of the accelerating voltage in the mass spectrometer for the scanning of the mass spectra. The technique was checked on a mixture of C₃ and C₄ hydrocarbons. [Abstracter's note: Complete translation.]

Card 2/2

KRYICV, P. I.

Zur einer arbeit von lutz: = Die allgemeine Losung der differential-gleichung U.S.W.=
Sitzungsber. Payer. Akad. Math. Naturw. Abt. (1926) Kazan, Izv. Fiz. - Matem. O-VA (3)
5 (1931), 85-89.

Opredeleniye gruppy sistemy Gaussa. Kazan', Izv. fiz. - matem. O-VA (3), 9 (1937),
13-30.

Postroyeniye kanonicheskikh integral'-nykh matrits sistemy Gaussa. Kazan', Izv.
Fiz. - matem. O-VA (3), 12 (1940), 92-117.

SO: Mathematics in the USSR, 1917-1947

Edited by Kurosh, A. G.,

Markusevich, A. I.

Rashevskiy, P. K.

Moscow-Leningrad, 1948

KRYLOV, B.L.

Determination of a group of regular systems of uniform linear equations with differential commutative substitutions of the second order. Trudy KAI 20:92-111 '48. (MLRA 10:6)
(Differential equations, Linear)

KRYLOV, B.L.

Finite solution of Riemann's problem for Gauss' systems. Trudy KAI
31:203-441 '56. (MLRA 10:5)

(Differential equations)
(Matrices) (Functional analysis)

KRYLOV, B.L. (Kazan')

Singleness of the solution of Riemannian problem.
'59.

Trudy KAI 45:13-28
(MIRA 14:1)

(Function*)

KRYLOV, B.L.; YEVGRAFOVA, I.N., otv. za vyp.

[Fundamentals of operational calculus] Osnovy operatsionnogo ischisleniia; uchebnoe posobie dlia aviatsionnykh institutov. Izd.2., perer. Kazan', Kazanskii aviatsionnyi in-t, 1961. 50 p. (MIRA 16:11)
(Calculus, Operational)

KHYLOV, B.L.

[Fundamentals of the field theory; textbook for aviation
institutes] Osnovy teorii polia; uchebnoe posobie dlia
aviatsionnykh institutov. Kazan', Kazanskii aviatsionnyi
in-t, 1962. 109 p. (MIRA 17:3)

KRYLOV, B.R., inzh.; LEZHNEV, A.L., inzh.

Mechanized processing of oscillograms. Prom. energ. 18 no.9:
12-14 S '63. (MIRA 16:10)

18.1285
 AUTHORS: Mikhaylov, A.S., Engineer, and Krylov, B.S., Engineer
 TITLE: Susceptibility of welded joints in titanium alloys to delayed cracking
 PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no.4, 1962, 48-53

S/129/62/000/004/008/010
 E027/E135

TEXT: The reasons for delayed cracking in welded joints of titanium alloys were studied. A constant-load bend test was used. Preliminary experiments showed that loading to 80% or 110% of the yield stress in the outer fibres had no effect on the time to fracture and further experiments were carried out using 80% did not break after a certain time the load was increased every day. Pre-heating to 65 °C for 8 hours had no effect on cracking and the tests were carried out at room temperature. The materials examined were single alpha phase alloys: BT1 (VT1), BT5 (VT5) and TiAl3Sn11, and an alpha-beta phase alloy OT4. After vacuum annealing the alloys contained 0.0002% H₂. Batches Card 1/3

Susceptibility of welded joints ...

S/129/62/000/004/008/010
 E027/E135

with the following hydrogen contents were prepared by thermal soaking: 0.005, 0.010, 0.015, 0.030 and 0.050%. Strips, 1.2 to 1.9 mm thick were butt welded using argon - arc procedure with no filler metal. The specimens were 15 mm wide and 60 mm long. The susceptibility to cracking increased with increasing hydrogen content. The time for cracking varied with hydrogen content from 6 to 40 days. All the alloys showed a coarse acicular structure in the welded joints. At 0.050% H₂ dark inclusions of titanium hydride could be observed in the VT1, VT5 and OT4 alloys. No titanium hydride could be found in TiAl3Sn11. The titanium hydride was finely distributed in the welded joint and coarsely distributed away from the heat affected zone. Hydrogen appears to be responsible for cracking under constant bending. In titanium alloys the following processes associated with diffusion of hydrogen can occur at room temperature: 1) the precipitation of hydride can occur; 2) hydrogen can be redistributed between the phases. Precipitation of hydride at grain boundaries and along certain crystallographic directions causes loss of ductility. Cracking is due to: 1) the above mentioned loss of Card 2/3

ERYLOV, B.S., insh.

Effect of high temperatures on peat insulating boards in the
process of drying. Torf. prom. 39 no.8:19-21 '62. (MIRA 16:1)

1. Ivanovskiy energeticheskij institut imeni V.I.Lenina.
(Peat—Drying)
(Insulating materials)

KRYLOV, B.S., inzh.; SOROKIN, A.F., doktor tekhn.nauk, prof. [deceased]

Concerning the movement of cotton particles in a gas flow.
Izv.vys.ucheb.zav.; energ. 6 no.1:111-114 Ja '63. (MIRA 16:2)

1. Ivanovskiy energeticheskiy institut imeni V.I. Lenina.
(Fluid dynamics) (Gas dynamics)

KRYLOV, B.S.; PYATACHKOV, B.I.; ROMANOVA, T.M.; SKRYABIN, Ye.I.

Drying of insulation slabs made from peat. Torf.prom. 40 no.5:
25-28 '63. (MIRA 16:8)

1. Ivanovskiy energeticheskij institut imeni V.I.Lenina.
(Peat--Drying) (Insulating materials)

RYLOV, B.S. (Leningrad); MIKHAYLOV, A.S. (Leningrad)

Effect of hydrogen on the tendency of titanium alloys to delayed
cracking. Izv. All S.S.R. Otd. tekhn. nauk. Mat. i gor. delo no.1:168-175
Jan-F '63. (MIRA 16:3)

(Titanium alloys--Hydrogen content)

ACCESSION NR: AT4007034

S/2598/63/000/010/0144/0150

AUTHOR: Mikhaylov, A. S.; Kry*lov, B. S.

TITLE: Effect of hydrogen on the tendency of titanium alloys to delayed fracture

SOURCE: AN SSSR. Institut metallurgii. Titan i yego splavy*, no. 10, 1963. Issledovaniya titanovy*kh splavov, 144-150

TOPIC TAGS: titanium alloy, VT-5-1 titanium alloy, TIA1 sub 4 Sn sub 6 Cu sub 2 alloy, OT-4 titanium alloy, VT-4 titanium alloy, OT-4-2 titanium alloy, AT-4 titanium alloy, VT-6 titanium alloy, VT-14 titanium alloy, titanium alloy strength, titanium alloy ductility, titanium alloy delayed cracking, titanium alloy hydrogen content, titanium alloy weld strength, titanium alloy weld ductility, weld delayed fracture

ABSTRACT: The present work was carried out because no data are available on the tendency to delayed cracking in Ti alloys. Delayed cracking was studied on unwelded and welded specimens by the method of prolonged bending. Three modifications of this method were tested. In the first, the bending produced stresses in the external fibers of the specimen equal to 0.8 times the modulus of elasticity during bending. In the 2 other modifications, the initial bending produced stresses in the external fibers equal to 0.5 times the modulus of elasticity, the

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ACCESSION NR: AT4007034

stress being increased every 24 hours by 0.1 mm in the second modification and by 0.2 mm in the third. The second and third modifications proved more sensitive. The relationship between delayed cracking and the H content was investigated after vacuum annealing, when the H content dropped below 0.002%, and after saturation with H up to 0.005-0.03%. Saturation with H was carried out by the thermodiffusion method at 700C. It was proved that an increase in the H content may cause delayed cracking. The resistance to cracking of the welded specimens was generally lower than that of the basic alloy. Only in the VT-14 and T-4 alloys was this resistance higher for the welded specimens than for the basic metal. All alloys tested of the α and $\alpha + \beta$ structures showed delayed cracking above a critical H content, depending on the presence of the hydride phase of Ti. It was found that delayed cracking of the alloys VT-5-1, TiAl₁₄Sn₆Cu₂, OT-4 and VT-14, used for welded construction, can be predicted by reducing the H content of these alloys below 0.015%. Orig. art. has: 2 figures and 3 tables.

ASSOCIATION: INSTITUT METALLURGI AN SSSR (Institute of Metallurgy AN SSSR)

SUBMITTED: 00

DATE ACQ: 27Dec63

ENCL: 00

SUB CODE: ML

NO REF SOV: 002

OTHER: 003

Card 2/2

ACCESSION NR: AT4007037

8/2398/63/000/010/0159/0167

AUTHOR: Kry*lov, B. S.

TITLE: Kinetics of hydrogen evolution from titanium and its alloys in a vacuum

SOURCE: AN SSSR. Institut metallurgii. Titan i yego splavy*, no. 10, 1963. Issledovaniya titanovy*kh splavov, 159-167

TOPIC TAGS: titanium alloy, titanium, solid state degassing, solid titanium degassing, hydrogen evolution, vacuum degassing, titanium alloy degassing, VT-1 alloy degassing, OT-4 alloy degassing, degassing

ABSTRACT: Hydrogen outgassing of commercially pure titanium and of titanium alloy OT-4 in a vacuum was investigated at temperatures from 600 to 1000C. Test specimens measuring 10mm^3 , $1.5 \times 10 \times 19 \text{ mm}$, and $3.0 \times 10 \times 19 \text{ mm}$ were heated to 700C and suffused with hydrogen at four concentrations: 0.015%, 0.030%, 0.050% and 0.100%. Specimens were transferred to an environmental chamber which was evacuated to $5 \times 10^{-4} \text{ mm Hg}$, and exposed at 600, 650, 700, 750, 800, 900 and 1000C until outgassing ceased. Above 650C, hydrogen evolves briskly at a rate increasing

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ACCESSION NR: AT4007037

with temperature, and also increasing directly in relation to original hydrogen content. Cr-Ni electroplating or oxide conversion coating markedly decreases the degassing rate. Neither specimen size, up to 10 mm thick, nor distribution of hydrogen affect the degassing rate. Orig. art. has: 4 photomicrographs, 1 schematic, and 14 graphs.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute AN SSSR)

SUBMITTED: 00

DATE ACQ: 27Dec63

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

Card 2/2

KRYLOV, B.S.

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