GOL'DENBERG, A. A.

Tekhnicheskiy kontrol' v sudostroyenii (Technical control in ship building, by) V. L. Vasil'yev i A. A. Gol'denberg. Leningrad, Sudpromgiz, 1958.
178 p. tables, diagrs.
"Ispol'zovannaya Literatura": p. (179)

VASIL'YEV, V.L.; GOL'DENBERG, A.A.; AVENIROV, S.P., otv. red.; GSVENSKAYA, A.A., red.; FRUMKIN, P.S., tekhn. red.

[Technical control in shipbuilding] Tekhnicheskii kontrol' v sudostroenii. Leningrad, Sudpromgiz, 1952. 178 p. (MLRA 16:7)

(Shipbuilding)

HUME-ROTHERY, W.; CHRISTIAN, I.W.; PEARSON, W.B.; KADYKOVA, G.N. [translator]; KRASNOPEVTSEVA, T.V. [translator]; RAVDEL', M.P. [translator]; SELISSKIY, Ya.P., redaktor; GOL'DENBERG, A.A., redaktor; ARKHANGEL'SKAYA, M.S., redaktor izdatel'stva; EVNSON, I.M., tekhnicheskiy redaktor

[Metallurgical equilibrium diagrams. Translated from the English] Diagrammy ravnovesiia metallicheskikh sistem. Perevod s angliiskogo B.N.Kadykovoi i dr. Pod red. IA.P.Selisskogo. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 399 p.
(Phase rule and equilibrium) (MLRA 10:4)
(Alloys) (Solutions, Solid)

GOLDENBERGA

AL'TGAUZEN, O.N., kandidat fiziko-matematicheskikh nauk; BERSHTEYN, M.L., kandidat tekhnicheskikh nauk; BLANTER, M.Ye., doktor tekhnicheskikh nauk; BOKSHTEYN, S.Z., doktor tekhnicheskikh nauk; BOLKHOVITINOVA, Ye.N., kandidat tekhnicheskikh nauk; BORZDYKA, A.M., doktor tekhnicheskikh nauk; BUNIN, K.P., doktor tekhnicheskikh nauk; VINOGRAD, M.I., kandidat tekhnicheskikh nauk; VOLOVIK, B.Ye., doktor tekhnicheskikh nauk [deceased]; GAMOV, M.I., inzhener; GELLER, Yu.A., doktor tekhnicheskikh nauk; GORELIK, S.S., kandidat tekhnicheskikh nauk; GOL'DENBERG, A.A., kandidat tekhnicheskikh nauk; GOTLIB, L.I., kandidat tekhnicheskikh nauk; GRIGOROVICH, V.K., kandidat tekhnicheskikh nauk; GULYAYEV, B.B., doktor tekhnicheskikh nauk; DOVGALEVSKIY, Ya.M, kandidat tekhnicheskikh nauk; DUDOVTSEV, P.A., kandidat tekhnicheskikh nauk; KIDIN, I.N., doktor tekhnicheskikh nauk; KIPNIS, S.Kh., inzhener; KORITSKIY, V.G., kandidat tekhnicheskikh nauk; LANDA, A.F., doktor tekhnicheskikh nauk; LEYKIN, I.M., kandidat tekhnicheskikh nauk; LIVSHITS, L.S., kandidat tekhnicheskikh nauk; L'VOV, M.A., kandidat tekhnicheskikh nauk; MALYSHEV, K.A., kandidat tekhnicheskikh nauk; MEYERSON, G.A., doktor tekhnicheskikh nauk; MINKEVICH, A.N., kandidat tekhnicheskikh nauk; MOROZ, L.S., doktor tekhnicheskikh nauk; NATANSON, A.K., kandidat tekhnicheskikh nauk; NAKHIMOV, A.M., inzhener; NAKHIMOV, D.M., kandidat tekhnicheskikh nauk; POGODIN-ALEKSEYEV, G.I., doktor tekhnicheskikh nauk; POPOVA, N.M., kandidat tekhnicheskikh nauk; POPOV, A.A., kandidat tekhnicheskikh nauk; RAKHSHTADT, A.G., kandidat tekhnicheskikh nauk; ROGEL'BERG, I.L., kandidat tekhnicheskikh nauk;

(Continued on next card)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4"

AL'TGAUZEN, O.N.---- (continued) Card 2.

SADOVSKIY, V.D., doktor tekhnicheskikh nauk; SALTYKOV, S.A., inzhener; SOBOLEV, N.D., kandidat tekhnicheskikh nauk; SOLODIKHIN, A.G., kandidat tekhnicheskikh nauk; UMANSKIY, Ya.S., kandidat tekhnicheskikh nauk; UTEVSKIY, L.M., kandidat tekhnicheskikh nauk; FRIDMAN, Ya.B., doktor tekhnicheskikh nauk; KHIMYSHIN, F.F., kandidat tekhnicheskikh nauk; KHRUSHCHEV, M.M., doktor tekhnicheskikh nauk; CHERNASHKIN, V.G., kandidat tekhnicheskikh nauk; SHAPIRO, M.M., inzhener; SHKOL'NIK, L.M., kandidat tekhnicheskikh nauk; SHRAYBER, D.S., kandidat tekhnicheskikh nauk; SHCHAPOV, N.P., doktor tekhnicheskikh nauk; GUDTSOV , N.T., akademik, redaktor; GORODIN, A.M. redaktor izdatel'stva; VAYNSHTEYN, Ye.B., tekhnicheskiy redaktor

[Physical metallurgy and the heat treatment of steel and iron; a reference book] Metallovedenie i termicheskaia obrabotka stali i chuguna; spravochnik. Pod red. N.T.Dudtsova, M.L.Bernshteina, A.G. Rakhshtadta. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 1204 p. (MLRA 9:9)

1. Chlen -korrespondent Akademii nauk USSR (for Bunin)
(Steel--Heat treatment) (Iron--Heat treatment)
(Physical metallurgy)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

Gol'Denberg, A.A.

Hardenability and distribution of hardness in the cross-section of quenched steel parts. M.S. Blanter and A.A. Gol'denberg. *Metalloved. i Obrabotka Metallov* [1956] No. 8, 31-36.—The results below the quenched surface at which various proportions of martensite were present in the microstructure were plotted versus the "characteristic depth" at which 50% martensite was present. The rate of cooling at 700° was plotted versus distance from the quenched surface. The results of both of the above plots were combined into a single nomograph that gave the cooling rate and distance from the quenched surface at which a given percentage martensite occurred as a function of the characteristic depth. Cooling rates for various positions in cylinders 25 to 170 mm. in diam. and in spheres 25 to 200 mm. in diam. were given for water quenching and oil quenching. A nomograph was given for detg. the Rc hardness as a function of C content and percentage martensite. Examples of use of the nomographs were given. A. G.

GOL'DENBERG, A.A.

Using various forms of the end-quench hardenability test. Zav. lab. 22 no.9:1063-1065 '56. (MLRA 9:12)

1. Vsesoyuznyy zaochnyy mashinostroitel'nyy institut.
(Steel--Testing)

LASHKO, Nikolay Fedorovich; Yeremin, Nikolay Ivanovich; [illegible], A.G., kandidat tekhnicheskikh nauk, dotsent, retsenzent; [illegible], A.I., inzhener, redaktor; SHEVTSOVA, Ye.A., redaktor izdatel'stva; SALAZKOV, N.P., tekhnicheskiy redaktor; M.Tv[illegible], T.N., tekhnicheskiy redaktor

Phase analysis and structure of austenitic steels. [Fazovyi analiz i struktura austenitnykh stalei. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 234 p. (MLRA 10:10)
(Steel)

GOL'DENBERG, A.A., kandidat tekhnicheskikh nauk.

Use of titanium in industry (from "Modern Metals" no. 5, 1956).
Metalloved. i obr. met. no.4:56-58 Ap '57. (MLRA 10:5)
(Titanium)

129-2-2/11

AUTHOR: Gol'denberg, A.A. (Cand.Tech.Sc.)

TITLE: Stress Relaxation of Hardened Yl2A Steel (Relaksatsiya napryazheniy zakalennoy stali Yl2A)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 2, pp.6-11 (USSR)

ABSTRACT: The aim of the author was to study the relaxation stresses in the hardened steel Yl2A (1.1% C; 0.18% Mn; 0.12% Si; 0.015% P and 0.020% S). The microstructure in the annealed state consisted ot lamellar pearlite with a discontinuous network of cementite along the grain boundaries. The tests consisted of bending of ring specimens with an active part in the form of a beam of equal bending resistance as described by I.A.Oding (Ref.2). The specimens were made of annealed steel, hardened in water from 780°C and tempered for 4 hours at 150 and 250°C for obtaining structures characterising various degrees of stability and also for reducing internal stresses produced during hardening. In calculating the stresses the author did not take into consideration the stresses remaining after hardening since it can be assumed that the magnitude of these is comparable to

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Stress Relaxation of Hardened Yl2A Steel.

the error of the experiments (about 1 kg/mm^2). For solving the problems under consideration it was adequate to study the process of relaxation during the first and the beginning of the second period; the duration of each of the tests was 35 to 40 hours and, under equal conditions, annealed specimens were tested at the same time. The primary relaxation curves, Fig.1, indicate that for the temperature of the process above that of the preliminary tempering the relaxation is terminated in about 2 hours; during this time 86, 75 and 81% of the stresses are subjected to relaxation for initial stresses of 14, 28 and 42 kg/mm^2. In Fig.2 the drop in the stresses as a function of the initial stress in the relaxation time is given. Fig.3 gives the primary relaxation curves for annealed Yl2A steel whilst in Fig.4 the stress relaxation is plotted as a function of the initial stress and the relaxation time for Yl2A steel annealed at 150 and 250°C respectively. It is concluded that the first period of stress relaxation of hardened carbon steel is considerably accelerated if accompanied by phase transformations which take place during the tempering. Apparently, this phenomenon is explained by accelerated diffusion and increased plasticity of the metal. Increase of the initial stresses

Stress Relaxation of Hardened Yl2A Steel.

brings about an acceleration of the relaxation. However, the character of the fall of stress depends on factors which influence the plasticity of the material (magnitude of the initial stresses, phase transformations, etc.) The intensity of the process of relaxation depends appreciably on the stability of the structure. In a number of cases the influence of the stability of the structure predominates over the influence of increased temperature and therefore the stresses are reduced faster at lower temperatures than at higher temperatures. There are 4 figures and 9 references, all of which are Slavic.

ASSOCIATION: Moscow Engineering Correspondence Institute (Vsesoyuznyy zaochnyy mashinostroitel'nyy institut)

AVAILABLE: Library of Congress.

GOL'DENBERG, A., referent

Metals for high-speed aviation(from "Metal Progress" no. 71, 1957). Metalloved. i obr. met. no. 6:57-60 Je '58. (MIRA 11:7)
(Heat-resistant alloys)

AUTHOR: Goldenberg, A. A., Candidate of Technical Sciences 117/129-58-10-3/14

TITLE: Influence of Internal Transformations on the Relaxation Stress During Strength of the Steel 30KhGSNA and Aluminium Alloy V95 (Vliyaniye vnutrennikh prevrashcheniy na relaksatsionnuyu prochnost' pri otpuske stali 30KhGSNA i splava V95)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1958, Nr 10, pp 11-17 (USSR)

ABSTRACT: In a number of cases increased plasticity of the material during phase transformations is utilised for the purpose of preventing cracks during heat treatment. The author of this paper considered it of interest to study the influence of internal transformations on the stress relaxation in the Steel 30KhGSNA (0.3% C, 1.0% Mn, 0.95% Si, 1.2% Cr, 1.7% Ni) and the aluminium alloy V95 (5.72% Zn, 2.7% Mg, 1.2% Cu, 0.4% Mn). The tests were carried out by means of a method described by I. A. Oding (Ref 4): ring-shaped steel specimens were hardened from 900°C in oil and tempered at the temperatures 200, 300 and 500°C; specimens of the aluminium alloy V95 were quenched from 470°C in water and were subjected to artificial

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Influence of Internal Transformations on the Relaxation Stresses During Tempering of the Steel 30KhGSNA and Ageing of the Alloy V95

ageing at 100, 140 and 200°C. A part of the specimens were investigated in the hardened state. For preventing natural ageing, the specimens of the V95 alloy were heat treated directly prior to the tests. The treated specimens were loaded to various initial values, i.e. steel specimens with 20, 30 and 50 kg/mm^2 and the aluminium alloy specimens with 13 and 18 kg/mm^2, and were tested at various temperatures for durations of 35 to 40 hours, see Tables 1 and 2. The primary stress relaxation curves for the steel 30KhGSNA at 200°C are graphed in Fig.1, at 300°C in Fig.2; in Fig.3 the influence is graphed of the temperature of the preliminary tempering of the steel 30KhGSNA and of the relaxation time at 300°C on the magnitude of the drop in the stress. Fig.4 shows the primary relaxation curves for the steel 30KhGSNA at 500°C; Fig.5 shows the dependence of the drop in stress as a function of the time and temperature of the tests for the same steel. The primary relaxation curves for the aluminium alloy V95 at 140°C are graphed in Fig.6 and a micro-photo of the structure of this alloy after hardening and ageing at 200°C for 46 hours is reproduced in Fig.7.

Influence of Internal Transformations on the Relaxation Stresses During Tempering of the Steel 30KhGSNA and Ageing of the Alloy V95

The author arrives at the following conclusions: 1) For solving the problems of deformation-free heat treatment quantitative characteristics were established of the relaxation during the first period; the influence was studied of the stability of the structure of internal transformations, initial stresses, temperature and duration of the process on the intensity of drop in the stress and on the final level of these stresses. 2) Stress relaxation during tempering and ageing is considerably accelerated by internal transformations both by preparatory processes as well as by the processes associated with separation from the solid solution of phases and their coagulations. The fuller the transformation the more intensive will be the drop in stress. 3) The drop in the stresses is most intensified during the decomposition of the/solid solution (troostite transformation of martensite of the steel 30KhGSNA) and also in the case of completion of the separation and the beginning of coagulation of secondary phases (alloy V95).

Influence of Internal Transformations on the Relaxation Stresses During Tempering of the Steel 30KhGSNA and Ageing of the Alloy V95

4) The influence of internal transformations on the stress relaxation process is associated with an increase in the ductility, i.e. softening, of the material during the transformation. Stress relaxation during the first period is probably due to diffusion plasticity. Formation of new phases as well as the preparatory phenomena are accompanied by a weakening of the forces of the previous interatomic bonds and by intensifying the diffusion processes. Both these factors improve the ductility of the metal and intensify the relaxation process.
5) An increase in the temperature accelerates the relaxation process and reduces the level of the stresses which remain in the metal. An increase in the temperature has a considerable influence on the intensity of the process of relaxation of more stable structures.
6) An increase of the initial stresses brings an acceleration in the relaxation process. However, the influence of the level of initial stresses depends on the diffusion plasticity of the material: it increases with increasing temperature and decreases in the case of

Influence of Internal Transformations on the Relaxation Stresses During Tempering of the Steel 30KhGSLA and Ageing of the Alloy V95

more stable structures and also in the case of complete or partial elimination of phase transformations.
7) The intensity of stress relaxation processes depends on the inherent stability of the structure even in cases in which the stress relief is not accompanied by internal transformations. Under certain conditions the effect of lower stability of the structure exceeds the influence of increased temperature and, therefore, at lower tempering temperatures the stress decrease with equal intensity or faster than at higher temperatures.
There are 7 figures, 2 tables and 5 references, all of which are Soviet.

ASSOCIATION: Vsesoyuznyy zaochnyy mashinostroitel'nyy institut (All-Union Engineering Correspondence Institute)

1. Steel—Thermal stresses 2. Aluminum alloys—Thermal stresses
3. Metals—Transformations 4. Metals—Heat treatment

RYBARZH, A.A.; GOL'DENBERG, A.A., dotsent, kand.tekhn.nauk, red.; MEZHOVA, V.A., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Materials for deep stamping] Materialy dlia glubokoi shtampovki. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 191 p. (MIRA 12:5)

(Sheet-metal work)

FRIDMAN, Ya.B.; GORDEYEVA, T.A.; ZAYTSEV, A.M.; GOL'DENBERG, A.A., kand. tekhn.nauk, retsenzent; SHKOL'NIK, L.M., kand.tekhn.nauk, red.; DOBRITSINA, R., tekhn.red.; UVAROVA, A.F., tekhn.red.

[Structure and analysis of various types of metal fracture] Stroenie i analiz izlomov metallov. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1960. 127 p. (MIRA 13:3)
(Metallography)

S/129/60/000/009/009/009
E193/E483

9,2550 24,2200

AUTHOR: Gol'denberg, A.A., Candidate of Technical Sciences

TITLE: Recrystallization of a Magnetostrictive Alloy of the Permendur Type

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No.9, pp.42-45

TEXT: The alloy studied by the present author contained 43% Co, 0.15% Si, 0.08% Mn, 0.02% C, remainder Fe. It was melted in an induction furnace, reduced to 3 mm thickness, heated to 800°C and water-quenched, then cold-rolled to 0.5 mm, which gave 85% total deformation. The annealing tests were carried out in vacuum (10^{-3} mm Hg) at temperatures between 500 and 860°C and the process of recrystallization was studied by metallographic examination and hardness measurements. The following conclusions were reached: 1) Recrystallization of the alloy studied begins at 650°C and after 6 h at this temperature, grains 1 to 2 microns in diameter can be seen under the microscope. The most intense grain growth takes place at temperatures between 710 and 730°C. On reaching 750 to 860°C, the size of the grains remains constant at approximately 45 microns. Hardness of the alloy annealed at

83243

S/129/60/000/009/009/009
E193/E483

Recrystallization of a Magnetostrictive Alloy of the Permendur Type

750°C for 8 h, is approximately 200 kg/mm^2, against the hardness of approximately 400 kg/mm^2 in the work-hardened condition. 2) The relationship log n versus 1/T where T is the annealing temperature and n is the degree of softening equal

$$\frac{H_1 - H_2}{H_1 - H_2}$$

(H_1 - hardness of the work-hardened material; H_2 - hardness of the fully-annealed alloy, H - hardness of the alloy annealed at T) is linear within the 675 to 760°C range, i.e. above the temperature at which the order/disorder transformation takes place. The activation energy for recrystallization of the alloy, calculated from the above relationship, is 67 kcal/g-atom. 3) Metallographic analysis is a much more sensitive method of studying the recrystallization phenomena than the X-ray diffraction technique.

Engineer Ye.I.Detlaf participated in the experiments. There are 3 figures, 1 table and 6 references: 4 Soviet and 2 English.

ASSOCIATION: Vsesoyuznyy zaochnyy mashinostroitel'nyy institut (All-Union Correspondence Institute of Machinery)

Card 2/2

GOL'DENBERG, A.A.; DAVYDOVA, L.N.

Effect of the testing conditions on the results of testing on face specimens for hardenability. Zav.lab. 26 no.9:1090-1093 '60.
(MIRA 13:9)

1. Vsesoyuznyy zaochnyy mashinostroitel'nyy institut i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.P. Bardina.

(Steel--Testing)

GOL'DENBERG, A.A., kand.tekhn.nauk

Ukrainian Republic conference on the ordering of atoms and its effect on alloy properties. Metalloved. i term. obr. met. no.8: 59-60 Ag '62. (MIRA 15:11)

(Physical metallurgy---Congresses)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4"

S/185/63/008/002/006/012
D234/D308

AUTHORS: Gol'denberg, A. A. and Selisskiy, Ya. P.

TITLE: Ordering processes and activation energy of recrystallization of iron-cobalt alloys

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 8, no. 2, 1963, 216-218

TEXT: The authors investigated 8 alloys containing 0, 19, 34, 43, 53, 60, 65 and 77 at.% Co. Dependences of the time of beginning of the recrystallization on the inverse absolute temperature were plotted, and the activation energy Q was determined from them. Conclusions: ordering processes affect Q essentially above Kurnakov's point. Q is largest for alloys in which superstructure is observed. For an alloy with 50 at.% Co, Q = 98 kcal/g.atom; for those with 35 and 77% Co, Q = 51 and 57 kcal/g.atom respectively. The high values of Q are probably due to limitations of diffusion processes during annealing, connected with the existence of short-range order above Kurnakov's point. There is 1 figure.

Card 1/2

Ordering processes and ...

S/185/63/008/002/006/012
D234/D308

ASSOCIATION: Vsesoyuznyy zaochnyy mashinostroitel'nyy institut (All-Union External Institute of Machine Construction), TsNIIChM, Moscow

Card 2/2

L 18551-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/HW/G

ACCESSION NR: AP3001697 S/0126/63/015/005/0717/0724

AUTHORS: Gol'denberg, A. A.; Selisskiy, Ya. P.

TITLE: Recrystallization parameters and hardening phenomenon in Fe-Co alloys

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 5, 1963, 717-724

TOPIC TAGS: Fe-Co alloy , recrystallization parameter , hardening, iron-cobalt alloy

ABSTRACT: Fe-Co alloys containing 0, 19, 34, 43, 53, 60, 65 and 77% of Co were studied in order to obtain systematic quantitative data concerning their recrystallization and to investigate the effect of hardening on this process. The energy of the process activation (Q) was determined from the formula $\tau = A \exp Q/RT$ where τ is time to the beginning of recrystallization, T is absolute temperature, and A is a constant obtained graphically. The error in the values of Q and A was $\pm$ 1.2 and $\pm$ 38% respectively. The relation of the recrystallization parameters to the Co content was expressed graphically. The authors conclude that the recrystallization intensity above the Kurnakov point [Abstractor's note: Kurnakov point not explained] depends on the presence of

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ACCESSION NR: AP3001697

superlattice transitions. The short-range order in the lattice lowers the mobility of the component atoms during annealing and decreases the recrystallization intensity. The magnitude of Q does not always correspond to the growth intensity of new grains; a correct evaluation requires a simultaneous account for Q and A. Orig. art. has: 2 formulas, 1 table, and 5 figures.

ASSOCIATION: Vsesoyuzny*y zaochny*y mashinostroitel'ny*y institut (State Correspondence Institute of Mechanical Engineering); Tsentral'ny*y nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 17Apr62 DATE ACQ: 11Jul63 ENCL: 00

SUB CODE: ML NO REF SOV: 011 OTHER: 002

GOL'DENBERG, A.A.

Laboratory of the Fiat Comline (Italy). Zav.lab., 29 no.7:
835-837 '63. (MIRA 16:8)
(Italy--Testing laboratories)

ACCESSION NO: AP4020043 S/0032/64/030/003/0302/0304

AUTHOR: Gol'denberg, A. A.

TITLE: A metallographic method of determining the activation energy of recrystallization

SOURCE: Zavodskaya laboratoriya, v. 30, no. 3, 1964, 302-304

TOPIC TAGS: metallographic method, activation, activation energy, recrystallization, iron cobalt alloy, microstructure, etching

ABSTRACT: It is shown that the activation energy of recrystallization may be determined without using x-ray analysis. The investigation was made on Fe-Co alloys. The samples were heated to produce recrystallization and then etched to bring out the microstructure. The time required to bring about incipient recrystallization was determined by microscopic examination of a series of samples subjected to definite recrystallizing temperatures for different periods of time. The entire area of each section (0.5 x 15 mm) was examined. The beginning of recrystallization was considered to be the moment new grains 2-3 microns across appeared. The new grains were distinguished by their equant appearance and their lower susceptibility to etching than the matrix. The logarithm of incipient recrystallization

ACCESSION NO: AP4020043

time was then plotted against the reciprocal of the temperature. The angle of slope of the resulting line gives the activation energy. An example is shown in Fig. 1 of the Enclosure, the energy being 64.5 kcal/g atom for iron and 75.5 kcal/g atom for an alloy with 43 at % Co. This method is as sensitive as x-ray techniques and may be used to determine the activation energy of recrystallization with an error of ~ 2%. Orig. art. has: 4 figures.

ASSOCIATION: Vsesoyuzny*y zaochny*y mashinostroitel'ny*y institut (All-Union Correspondence Institute for Mechanical Engineering)

SUBMITTED: 00 DATE ACQ: 27Mar64 ENCL: 01

SUB CODE: PH NO REF SOV: 006 OTHER: 000

GOL'DENBERG, A.A., [illegible]

Factors affecting the [illegible] steel. Vest.mashinostr. [illegible] (MLRA 7:10)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

L 20078-65 EWT(m)/EWP(b)/T/EWA(d)/EWP(t) MJW/JD

ACCESSION NR: AP4049107 S/0129/64/000/011/0037/0038

AUTHOR: Gol'denberg, A. A.; Doronin, V. M.; P'yankova, I. D.

TITLE: The optimal range for heat treatment of steel 1Kh12N2VMF

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 11, 1964, 37-38

TOPIC TAGS: steel tempering, steel quenching, steel heat treatment, steel mechanical property/steel 1Kh12N2VMF

ABSTRACT: Rod-shaped samples of steel 1Kh12N2VMF (0.12% C, 11.12% Cr, 1.64% Ni, 0.45% Mo, 0.22% V, 0.33% Si, 0.42% Mn, 0.016% S, and 0.022% P), 20 mm in diameter, from one smelt were heated to 780C and cooled in the furnace to 650C. Effects of heating on mechanical properties were studied by cooling samples in oil at 50C intervals from 900-1150C, by tempering at 1000C for 0.5, 2, 4, and 8 hours, and by tempering at 560C for 2 hours. Microstructural, x-ray, and carbide analyses were performed, and hardness, ductility, durability, and other properties were determined as functions of temperature. The optimal hardening temperature for this steel was found to be 1000-1050C. The best combination of durability and ductility (σ_b = 110kg/mm^2 and a_k = 10-12 (g-m/cm^2) was achieved after quenching and tempering at 570-580C. Orig. art. has: 4 graphs and 1 photomicrograph.

Card 1/3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

L 20078-65
ACCESSION NR: AP4049107

-2-

ASSOCIATION: Vsesoyuzny*y zaochny*y mashinostroitel'ny*y institut (All-Union Machine Design Correspondence Institute); Zavod "Elektrostal'" ("Elektrostal'" Plant)

SUBMITTED: 00 ENCL: 01 SUB CODE: MM

NO REF SOV: 000 OTHER: 000

Card 2/3

L 20078-65
ACCESSION NR: AP4049107

ENCLOSURE: 01

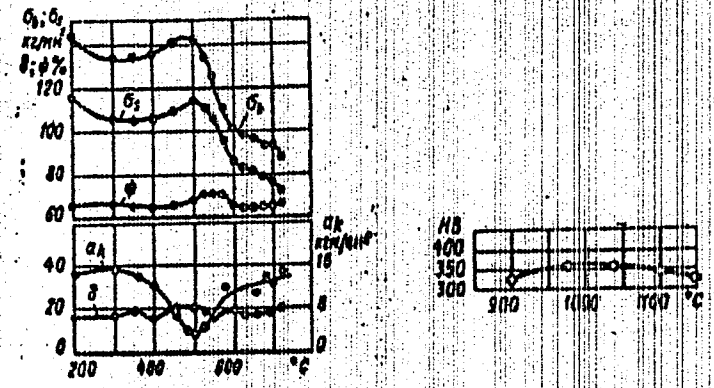

Fig. 1. (upper graph) Mechanical properties of steel 1Kh12N2V/M.F as a function of tempering temperature (σ_b, σ_s in kg/mm^2, a_k in kgm/cm^2, δ, ψ in %). (Quenched in oil from 1000C.) (lower graph) Hardness as a function of quenching temperature (quenching in oil).

Card 3/3

ACC NR: AP6011200 SOURCE CODE: UR/0413/66/000/006/0032/0032

INVENTOR: Semenov, O. A.; Alferova, N. S.; Yankovskiy, V. M.; Kolesnik, B. P.; Ostrin, G. Ya.; Plyatskovskiy, O. A.; Kheyfets, G. N.; Gleyberg, A. Z.; Chemerinskaya, R. I.; Gomelauri, N. G.; Blanter, M. Ye.; Sharadzenidze, S. A.; Suladze, O. N.; Gol'denberg, A. A.; Tseretell, P. A.; Ubiriya, A. Ye. Seperteladze, O. G.

ORG: none

TITLE: Method of manufacturing strengthened tubes. Class 18, No. 179786 [announced by the Ukrainian Scientific Research Institute of Pipes (Ukrainskiy nauchno-issledovatel'skiy trubnyy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 32

TOPIC TAGS: tube manufacturing, tube rolling, tube strengthening, tube heat treatment

ABSTRACT: This Author Certificate introduces a method of strengthening hot-rolled tubes. According to this method, the hot-rolled tube is quenched immediately after it leaves the first rolling mill, and then is sized or reduced at a tempering temperature. [ND]

SUB CODE: 13/ SUBM DATE: 12Nov63/ ATD PRESS: 4230

Card 1/1 UDC: 621.78.08.621.771.2

L 32937-66 EWP(k)/EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) [illegible]

ACC NR: AP6019932 SOURCE CODE: UR/0122/66/000/006/0063/0065

AUTHOR: Dergunova, V. S. (Candidate of technical sciences); Komissarov, G. K. (Engineer); Yermakova, M. P. (Engineer); Kuznetsov, L. I. (Engineer); Gol'denberg, A. A. (Candidate of technical sciences)

ORG: none

TITLE: Metal ceramic alloy for work at elevated temperatures

SOURCE: Vestnik mashinostroyeniya, no. 6, 1966, 63-65

TOPIC TAGS: metal ceramic material, sintered alloy, high temperature cermet material, titanium carbide containing alloy, boron carbide containing alloy, silicon carbide containing alloy, alloy oxidation, alloy thermal fatigue

ABSTRACT: Several ternary alloys containing 60.8—60% TiC, 20—39.2% B_4C, and 20% SiC were compacted at 2100—2150C under a pressure of 230 kg/cm^2, diffusion annealed at 1900C for 12 hr in an argon atmosphere, cooled at the rate of 100C/hr, and tested for oxidation resistance and thermal fatigue. Oxidation-resistance tests made on alloys oxidized in air at 900C for 20 min, 1.5 hr, 3.5 hr, 10 hr, and 15 hr showed that the most intensive oxidation, accompanied with oxide film formation, occurs in the initial period of the exposure and practically ceases after 5-hr exposure. All tested alloys can be regarded as oxidation-resistant since their weight gain in 15-hr

Card 1/2 UDC: 621.762

ACC NR: AP6019932

tests was only 4—6 mg/cm^2, which is 3.5 times lower than the weight gain of TiC under identical conditions of oxidation. The thermal fatigue resistance was evaluated from the number of quenches from 1200 and 2000C sustained by alloy specimens before failure. In quenching from 1200C, the investigated alloys sustained 40 thermal cycles without failure, which was double the number of thermal cycles sustained by TiC and 20 times as many as an alloy containing 85% SiC + 15% B_4C sustained. Hence, titanium-, boron- and silicon carbide-based alloys can be recommended as material suitable for making parts operating at high temperature under conditions of frequent temperature changes. Orig. art. has: 4 figures and 2 tables. [ND]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 006/ ATD PRESS: 5027

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

Goldenberg, A B

The effect of second exposure duration and high temperature on the development of subinternal centers. [illegible] and A. B. Gol'denberg. Sbornik [illegible] Issledovanii [illegible] Univ. 5, 61-6(1954); Referat. Zhur., Khim. 1955, Abstr. No. [illegible].—Investigation of the process of intensification of latent images (Broun, Uspekhi Nauch. Fot. Akad. Nauk S.S.S.R. Otdel. Khim. Nauk, 1, 235(1951)) is continued. The film is first exposed to white light for periods 1-64 sec. and then to low-intensity light, depending on the max. sensitivity of the film, for 1-8 hrs. The results are represented by curves of the intensification (increase of the optical d. ΔD) vs. the duration of the 2nd exposure (t). In the beginning ΔD grows with t because of subcenter addns., reaches a max. after 2-4 hrs. (depending on the film type), then decreases slightly and again increases. In the expts. with the effect of temp. on the intensification, the films are subjected to the 2nd exposure for 1 hr. at 20-85° or just heated without illumination. For films characterized by fast fogging when heated the light sensitivity S_t does not increase by simultaneous illumination and heating, as compared with the single effects of only 2nd exposure or elevated temp. On the contrary, the increase of S_t diminishes with the temp. rise above [illegible]. In films characterized by little fogging with temp. increase, the simultaneous effect of the 2nd exposure and the temp. rise causes a considerably greater increase of S_t than each of the 2 factors separately. N. Vasil'ev

1-4E2d

CA

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4"

GOL'DENBERG, A. B.

Subcenters of latent photographic image. Zh. I. Braude and A. B. Gol'tsenberg. *Uspekhi Nauch. Fot., Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 3, 35–8(1955). E. M.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

SOIL [illegible]

Spectroscopic studies of the composition of chlorophyll in [illegible] algae. A. A. Krasnovskii, E. A. Nesterova-[illegible] and A. P. Gol'dsmberg. [A. N. Bakh Biochem. Inst. Acad. Sci. U.S.S.R., Moscow.] *Biofizika* 1, 328-33 (1956). —Kniaz'e's (*Himograph*, Moscow (1954)) app. was used for spectrophotometric measurements. The studies were carried out with leaves of the algae and the solns. of the pigments in 80% acetone and MeOH at room temp., 40, 60, and 80°. The algae were collected from the depth of 20–5 m. of sea, from May to January. The 3 max. of absorption were found at 670, 675–8, and 685–90 mμ. The relative intensity of above absorption varied with the seasons. In the spring, together with the greater max. at 675–8 mμ, is present also max. at 690 mμ. In the fall both max. were moved to 675–85 mμ. The heating (5–15 min.) of algae to 60 and 80° produced the moving of the max. to 671–2 mμ. The solns. of chlorophyll (contg. both green and yellow pigments) in 80% acetone and MeOH from these algae gave only max. of absorption at 664 mμ, corresponding to chlorophyll a. Judged by the previous studies the presence of above 3 max. of absorption depends on variations in the degree of polymerization of chlorophyll in these algae.

A. V. Thatcomhov

GOL'DENBERG, A.B., otv. red.; MAVLYUTOV, R...., otv. red.; BOLOTOVSKIY, I.A., red.; KULIKOV, S.I., red.; KHRIZMAN, I.A., red.

[Reports for the conference "Technical Progress in the Manufacture of Machinery"] Doklady k konferentsii "Tekhnicheskii progress v mashinostroenii." Ufa, 1961. 84 p. (MIRA 17:11)

1. Ufa. Aviatsionnyy institut. 2. Kafedra soprotivleniya materialov Ufimskogo aviatsionnogo instituta (for Mavlyutov).

S/081/62/000/011/122/079
B158/B101

AUTHOR: Gol'tsenberg, A. B.

TITLE: The effect of plastic deformation on the absorption of primary centers in a fine-grain silver chloride emulsion

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1962, 76, abstract 93525 (Nauchn. yezhegodnik. Odessk. un-t. Fiz.-matem. fak. i N.-i. in-t fiz., no. 2, Odessa, 1961, 159 - 161)

TEXT: The effect of pressure (in darkness) on the spectral absorption of primary centers (PC) in Lippman AgCl emulsions was studied as far as exposure and development. It was found that above a pressure of 1000 kg/cm^2, the fine structure of the absorption PC is worn smooth and the absorption as a whole is considerably reduced. No difference was found in the optical density (D) after development as between the deformed and non-deformed sections. If, however, the films are exposed and developed after being subjected to pressure a certain reduction in D is observed in the deformed sections. The results are explained by assuming that pressure imparts additional energy to the unstable PC which contain, according

Card 1/2

S/081/62/000/003/022/075
B158/B101

The effect of plastic deformation...

to Mitchell, 1 - 3 atoms of Ag, and thus destroys them. The interstitial Ag^+ ions formed when this occurs remain unconsumed in the formation of the latent image. [Abstracter's note: Complete translation.]

Card 2/2

S/081/62/000/007/015/033
B168/B101

AUTHOR: Gol'denberg, A. B.

TITLE: Nuclei in the silver halide and light-sensitivity of photographic layers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 7, 1962, 51, abstract 7B405 (Nauchn. zapiski Odessk. un-t. Fiz. matem. fak. i N.-i. in-t fiz., no. 2. Odessa, 1961, 171 - 175)

TEXT: The action of monochromatic exposure on the primary silver nuclei of the microcrystals of the emulsion and the mechanism of their breakdown are studied in connection with an investigation into the process of formation of the latent image in various silver halide emulsions. [Abstracter's note: Complete translation.]

Card 1/1

GOL'DENBERG, A.B.

Effect of monochromatic light on the primary centers of silver halide. Zhur.nauch.i prikl.fot. i kin. 6 no.4:241-246 Jl-Ag '61. (MIRA 14:11)

1. Nauchno-issledovatel'skiy institut fiziki Odesskogo universiteta imeni I.I. Mechnikova.

(Photographic emulsions)

RENTEA, Dumitru, ing. (Bucuresti); GOLDENBERG, Carol, ing. (Bucuresti)

Aspects of the increased economic effectiveness in thermo-energetics. Energetica Rum 10 no.7:297-302 Jl '62.

1. Sef de atelier la Institutul de studii si proiectari energetice (for Rentea). 2. Proiectant sef la Institutul de studii si proiectari energetice (for Goldenberg).

S/077/63/008/001/003/003
A066/A126

AUTHORS: Kirillov, Ye.A., Nesterovskaya, Ye.A., Gol'denberg, A.B.

TITLE: The influence of optical density and of a luminous flux incident on a photocell upon the spectral dependence of the absorption curve of silver halides

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 8, no. 1, 1963, 47 - 50

TEXT: The influence exerted by the optical density of the object under consideration and by the load of the photometer on a photocell was studied from measurements of $I = I_1 - I_2$, where I_1 is the intensity of the light passing through the reference part of the emulsion, and I_2 is the intensity of the light passing through the part under examination. The experimental arrangement included a Zeiss monochromator and a Hartmann-Braun galvanometer. The preparations used for the purpose were fine-grained silver chloride emulsions. Conclusions: $\Delta I/\Delta n$ as a function of the galvanometer deflection n shows a horizontal section (maximum value), for which the contrast is a maximum, too. $\Delta I/\Delta D$ is a

The influence of optical density and of ....

linear function of the optical density ΔD up to $\Delta D = 0.045$, but above this value linearity is disturbed. Maximum sensitivity of the photocell to small variations in the luminous flux is reached within the linear section. Under normal pressures (linear section of I versus n) the absorption curves of the silver chloride emulsions exhibited a normal shape with fine structure. Application of higher pressures does not affect the general course of the absorption curve, but its fine structure vanishes. There are 6 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut fiziki Odesskogo gosudarstvennogo universiteta im. I.I. Mechnikova (Scientific Research Institute of Physics of Odessa State University imeni I.I. Mechnikov)

SUBMITTED: June 1, 1962

KIRILLOV, Ye.A. [deceased]; NESTEROVSKAYA, Ye.A.; BROUN, Zh.L.; GOL'DENBERG, A.B.

Nature of the centers of thin structures. Zhur.nauch. i prikl. fot. i kin. 10 no.2:148-149 Mr-Ap '65.

(MIRA 18:5)

GOLENDBERG, A.D., doktor meditsinskikh nauk

"Practical physical therapy" by I.A. Abrikosov, N.F. Krylova. Reviewed by A.D. Golendberg. Vop. kur., fizioter. i lech. fiz. kul't. 24 no. 4:366-368 Jl-Ag '59. (MIRA 13:8)
(PHYSICAL THERAPY) (ABRIKOSOV, I.A.) (KRYLOVA, N.P.)

GOLDENBERG, A.D.

Method for adrenaline electrophoresis. Vop. kur., fizioter. i lech. fiz. kul't. 26 no.1:54-57 '61. (MIRA 14:5)

1. Iz bal'neo-fizioterapevticheskogo otdeleniya (zav. - dotsent A.D. Goldenberg) i bol'nitsy imeni V.I.Lenina (glavnyy vrach-zasluzhennyy vrach RSFSR V.S.Razumikhin).

(ADRENALINE) (ELECTROPHORESIS)

5(1, 2)

AUTHORS: Novoselova, A. V., [illegible] SOV/[illegible]
Men'kov, A. A., [illegible]berg, A. [illegible]

TITLE: Manufacture of Pure [illegible]

PERIODICAL: Izvestiya vysshikh uchebnykh [illegible]
Khimicheskaya tekhnologiya [illegible] SSSR

ABSTRACT: By way of introduction the [illegible] synthesis of tellurides with semiconductor properties is mentioned, and the main admixtures [illegible] (Ref [illegible]) are enumerated. The purification methods are [illegible] (Refs [illegible]). Due to the fact that tellurium, both in the liquid and in the solid state, possesses a considerable vapor pressure (Refs 7-10), sublimation constitutes a most efficient purification method. The authors studied the process [illegible] and the tellurium distribution in the condensat[illegible]. The initial tellurium was highly oxidized and [illegible] a great amount of tellurium dioxide. It was chemically [illegible] investigated with regard to selenium admixture. For [illegible]

Card 1/3

$1 \cdot 10^{-4}$% each. However, halogen and selenium admixtures cannot be determined by means of spectral analysis. In an earlier study (Ref 13) it had been found that no separation of selenium from tellurium occurs on sublimation. As already mentioned, the selenium content in tellurium could, however, be lowered to $2 \cdot 10^{-4}$% by means of chemical purification. Due to the different volatilities of their dioxides selenium and tellurium can be separated (Refs 14-18). The purification of other admixtures (Ref 19) is discussed. There are 3 figures, 2 tables, and 19 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova. Kafedra neorganicheskoy khimii (Moscow State University imeni M. V. Lomonosov, Chair of Inorganic Chemistry)

SUBMITTED: November 14, 1957

L 06199-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/JH
ACC NR: AP6031723 SOURCE CODE: UR/0370/66/000/005/0137/0147

AUTHOR: Nagorskaya, N. D. (Moscow); Gol'denberg, A. E. (Moscow); Novoselova, A. V. (Moscow); Borisova, A. P. (Moscow); Frilyander, I. N. (Moscow); Yatsenko, K. P.

ORG: none

TITLE: Partial phase diagram of the Al-Be-Mg system

SOURCE: AN SSSR. Izvestiya. Metally, no. 5, 1966, 137-147

TOPIC TAGS: aluminum beryllium magnesium system, aluminum beryllium magnesium alloy, phase diagram, phase composition, alloy structure, METAL CRYSTALLIZATION, ALLOY SYSTEM, BERYLLIUM CONTAINING ALLOY, ALUMINIUM CONTAINING ALLOY, MAGNESIUM CONTAINING ALLOY

ABSTRACT: A partial phase diagram of the aluminum-beryllium-magnesium system (see Fig. 1) has been plotted on the basis of data obtained by physicochemical analysis of 30 alloys containing 0—90% aluminum, 7.17—56.28% beryllium and 0—27.73% magnesium. Alloys were melted from AB-000-grade aluminum (99.99%-pure), MG-1 grade magnesium (99.91%-pure) and sublimated beryllium (99.4%-pure). It was found that three phases crystallize in the partial Al-β_{Al-Mg}-Be system: aluminum-base solid solution (α_{Al}); beryllium-base solid solution (B); and $\beta_{Al-Mg-Be}$ phase. At 445C the ternary eutectic solidifies according to the following reaction:

$$L \rightleftarrows B + \alpha_{Al} + \beta_{Al-Mg-Be}$$

UDC: 669.715'725'721

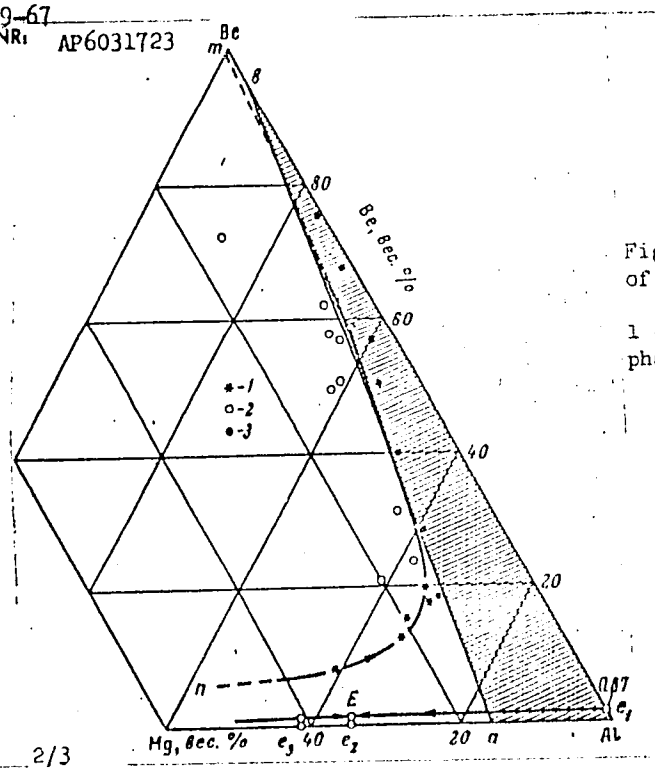

Fig. 1. Partial phase diagram of the Al-Be-Mg system

1 - Boundary line; 2 - two liquid phases; 3 - one liquid phase.

L 06199-67
ACC NR: AP6031723

Ternary eutectic contains 35% Mg and slightly over 0.6% Be. A decomposition of the liquid phase into two mutually immiscible liquids occurs in a wide range of compositions. Orig. art. has: 5 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: 27Mar65/ ORIG REF: 008/ OTH REF: 017

Card 3/3 afs

TSESARSKAYA, S. I;MONOSZON, S. M;SHEYNMAN, Ye. A;YAKHNIS, B. L;GOLDENBERG, A. I;GORLOVSKAYA, Ye. P;KLEBANOVA, M. A.

Role of roentgenological method in examination of children for B.C.G. vaccination. Probl. tuberk., Moskva no.4:31-36 July-Aug. 1950. (CLML 20:1)

1. (Candidate Medical Sciences S. I. Tserkaya -- Odessa Tuberculosis Institute; S. M. Monoszon and E. A. Sheyman -- Leningrad Tuberculosis Institute; Prof. B. L. Yakhnis and Candidate Medical Sciences A. Ya. Gol'berg -- Khar'kov Tuberculosis Institute; E. P. Gorlovskaya -- Kiev Tuberculosis Institute.

L 8508-(A) EWT(m)/EWP(j)/T RPL WW/WE/RM

ACC NR: AP5028491 SOURCE CODE: UR/0286/65/000/020/0066/0066

AUTHORS: Sirota, A. G.; Ryabikov, Ye. P.; Chopko, L. P.; Lavrovskiy, K. P.; Brodskiy, A. M.; Rumyantsev, A. N.; Il'chenko, P. A.; Gol'denberg, A. L.

ORG: none

TITLE: A method for obtaining ethylene copolymers. Class 39, No. 175658

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 66

TOPIC TAGS: polymer, copolymer, ethylene, olefin, chromium compound, catalyst, copolymerization, paraffin, cracking, petroleum

ABSTRACT: This Author Certificate presents a method for obtaining ethylene copolymers by copolymerizing ethylene with an α-olefin-containing compound at 60-130C and at a pressure of 30-40 atm in the presence of acid chromium catalyst. To simplify the technique of copolymerization, benzine distillate of rapid contact cracking of petroleum paraffins is used as the α-olefin-containing compounds.

SUB CODE: 07/ SUBM DATE: 07Feb63

UDC: 678.742.2-139

Card 1/1

L 13136-66 EWT(1)/EWA(h)

ACC NR: AP6000741 SOURCE CODE: UR/0386/65/002/009/0430/0435

AUTHOR: Gaponov, A. V.; Gol'denberg, A. L.; Grigor'yev, D. P.; Orlova, I. M.; Pankratova, T. B.; Petelin, M. I.

ORG: Gor'kiy Scientific Research Radiophysics Institute (Gor'kovskiy nauchno-issledovatel'skiy radiofizicheskiy institut)

TITLE: Induced synchrotron radiation of electrons in cavity resonators

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 9, 1965, 430-435

TOPIC TAGS: microwave technology, cavity resonator, microwave plasma, maser radar

ABSTRACT: The authors describe the elements of apparatus (Fig. 1) aimed at increasing the total induced synchrotron radiation power by increasing the volume of the "active medium" (cross section of the electron beam or the volume of the nonequilibrium magnetoactive plasma), through the use of quasioptical electrodynamic systems of the "open" type. Some results are presented of observation of coherent synchrotron radiation of helical electron beams in "open" cavity resonators of sufficiently large volume. Self-excitation (generation) of electromagnetic oscillations at the electron gyrofrequence (magnetic field H_0 = 3200 oe, λ = 3.4 cm) was observed in a resonator constituting a 20 cm section of rectangular waveguide (TE_{011} mode). The electron beam was introduced at the maximum of the electric field from the end, through a waveguide biased beyond cutoff. The second, open end of the cavity was connected with a large-section waveguide used to extract the energy and to serve simultaneously as a collect-

Card 1/2

L 13136-66

ACC NR: AP6000741

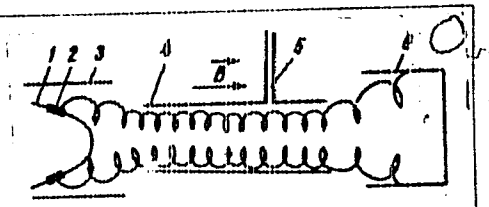

Fig. 1. Schematic diagram of oscillator using induced electron synchrotron radiation. 1 - Cathode, 2 - emitting surface, 3 - anode, 4 - resonator, 5 - high-frequency power output, 6 - collector, B - static magnetic field.

or. The power of the generated radiation increased monotonically with increasing electron rotation velocity and with decreasing longitudinal velocity, and also with increasing electron current. At $\omega \approx \omega_H$ (ω = radiation frequency, ω_H = electron gyrofrequency) the power obtained was 6 w at current 80 ma and beam voltage 8 kv, while at $\omega \approx 2\omega_H$ the power was 190 w at 320 ma and 19 kv. Further increase in power was hindered by difficulties in cooling the generators. Furthermore, a gyroresonance discharge was produced in the residual gas in the apparatus with $\omega \approx \omega_H$. The same causes kept the electron efficiency from reaching the theoretically predicted value of 19%. In experimental maser models with trochoidal electron beams and traveling waves, the efficiency reaches 10--15%. Orig. art. has: 3 figures and 1 formula.

SUB CODE: 20/ 17/ SUBM DATE: 09Sep65/ ORIG REF: 007/ OTH REF: 004

Card 2/2 MW

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S/191/60/000/002/001/012
B027/B058

AUTHORS: Arkhipova, Z. V., Semenova, A. S., Sirota, A. G., Gol'denberg, A. L., Il'chenko, P. A.

TITLE: Copolymerization of Ethylene With Propylene

PERIODICAL: Plasticheskiye massy, 1960, No. 2, pp. 4-6

TEXT: The authors deal with the copolymerization of ethylene with propylene, since polymerization of ethylene with chromium oxide catalysts on an aluminum silicate carrier results in a material of too low elasticity. The change of the polyethylene properties by increasing the ramification and reducing the degree of crystallinity by means of copolymerization of ethylene with other monomers is therefore of interest. The methods elaborated for the production of polyethylene (Ref. 1) were applied for the synthesis of ethylene copolymers with propylene. A carrier with 4% Al_2O_3 and 96% SiO_2 saturated with a 0.3 mole aqueous chromium anhydride solution was used as catalyst. The activation took place at 550°C, air velocity 200 l per 1 l catalyst during 5 hrs. A 1.5 l autoclave with a stirring

Card 1/3

apparatus and steam jacket was used for the copolymerization. The degree of ramification of the copolymers was determined by infrared absorption spectra, the degree of crystallinity was calculated according to X-ray diffraction curves. The copolymerization of ethylene with propylene proceeds less readily than the polymerization of ethylene; the reaction is strongly accelerated if the pressure is increased within the range of from 8 to 30 atm. The temperature is a very important factor in the preparation of polymers with certain properties. A temperature increase reduces the viscosity, tensile strength, and breaking elongation. An increase of the propylene content in the initial mixture of the monomers leads to increased ramification of the copolymers and a reduction of the crystallinity degree. It follows from the dependence determined that the properties of new polymers can be altered toward the required direction by altering the composition of the initial mixture of the monomers and the conditions of the copolymerization process. Thanks are expressed to Professor V. N. Chulanovskiy and the scientific collaborators I. N. Andreyeva and V. N. Zapletnyak for advice rendered, to B. A. Lipkind for producing the aluminum silicate samples and to A. N. Val'berg, A. A. Stepanova, and G. S. Rubinson for experimental work. Three tables, figures,

AUTHORS: [illegible]'denberg, A. [illegible], S[illegible], A. [illegible]

TITLE: Spectroscopic Method [illegible] Ethyl [illegible] Impurities in Styrene

PERIODICAL: Plasti[illegible]

ABSTRACT: The authors report [illegible] spectroscopic [illegible] for the quantitative determination of ethyl benzene impurities in styrene. It is known that even small quantities of ethyl benzene impair the properties of polystyrene. They found that such impurities can be best determined on the basis of the 2875 cm^{-1} absorption band, though this band is not the most intensive one in the infrared spectrum. [illegible] The infrared spectra of ethyl [illegible] styrene [illegible] an [illegible]-11 (IKS-11) spectrometer [illegible]. The authors used the 2875 cm^{-1} band for analysis. [illegible]

Card 1/2

Card 2/2

AUTHOR: [redacted]

TITLE: Determination of the Number of Vinyl Groups in Polyethylene by the Method of Infrared Absorption Spectra

PERIODICAL: Plasticheskiye massy, 1962, No. 12, pp. 59 - 61

TEXT: The present paper deals with the method of quantitative determination of vinyl groups in polyethylene by means of infrared absorption spectra. Two absorption bands in the range of from 650 to 1400 cm^{-1}, namely at 909 and at 990 cm^{-1}, are characteristic of the vinyl group. The former is more intensive and due to strong vibrations of the hydrogen atom at the terminal carbon atom of the vinyl group. n-heptene-1 was used as standard containing a vinyl group; its spectrum is given along with that of polyethylene in Fig 1. n-octane, CCl_4, and isooctane (2,2,4-trimethylpentane) were used as solvents. The spectra of n-heptene solutions in the above solvents were obtained on an UKO-11 (IKS-11) spectrometer. Synthetic n-heptene-1 was supplied by M. Neymark. Fig.2 shows the spectrum of a

Card 1/3

Determination of the Number of Vinyl Groups in Polyethylene by the Method of Infrared Absorption Spectra

S/191/60/[illegible]
B0[illegible]/B0[illegible]

2% solution of n-heptene-1 in n-octane in the range of 950 - [illegible] cm^{-1}. The molar extinction coefficient of 123 obtained is in good agreement with published data. Table 1 gives experimental results for the molar extinction coefficient, the absorption coefficient, the total absorption intensity, and the half-widths of the absorption bands of n-heptene-1 at 910 cm^{-1}, as well as the true values of these quantities calculated from the Ramsay Tables. The effective spectral width of the slit was calculated according to Ref.4, and found to be 1.8 cm^{-1}. Fig.3 shows $D_{910 cm^{-1}}$ as a function of the n-heptene-1 concentration in n-octane for a 0.140 mm thick layer of solution. The linear character of the diagram indicates that the Lambert-Beer law is satisfied under the given conditions. The following equation was derived from the results of measurements made to determine the vinyl group content in polyethylene: $C = (D_{909 cm^{-1}}/d)A$ (1), where C denotes the concentration of vinyl groups in polyethylene, d the thickness of the polyethylene sample analyzed, and A a constant. A = [illegible] holds for high-density polyethylene (ρ = 0.9[illegible] g/cm^3), and A = [illegible]

Card 2/3

Determination of the Number of Vinyl Groups in Polyethylene by the Method of Infrared Absorption Spectra

S/190/60/002/012/015/016
B004/B064

for low-density polyethylene ($P = 0.950$ g/cm^3). The values of $D_{909cm^{-1}}$ have to be determined from the spectrum for molten polyethylene. Fig.4 shows the calibration curve for the dependence $D_{909cm^{-1}}/d_{mm}$ on the weight content of vinyl groups in low-density polyethylene. The results of determinations of the content of vinyl groups in polyethylene and in a copolymer of ethylene and propylene are given in Table 2. The mean error of determination is 5%. The higher number of vinyl groups in low-density polyethylene as compared with high-density polyethylene is very characteristic, and is related to the polymerization mechanism of ethylene at low pressure. Professor V. M. Chulanovskiy is thanked for valuable advice. There are 4 figures, 2 tables, and 9 references: 2 Soviet, 4 US, 2 British, and 1 German.

Card 3/3

GOL'DENBERG, A.I.

PHASE I BOOK EXPLOITATION SOV/5151

Leningrad. Universitet

Molekulyarnaya spektroskopiya (Molecular Spectroscopy) [Leningrad] Izd-vo Leningr. univ., 1960. 19? p. 4,700 copies printed.

Resp. Ed.: F. I. Skripov; Eds.: Ye. V. Shchemeleva and V. D. Piastro; Tech. Ed.: S. D. Vodolagina.

PURPOSE: This collection of articles is intended for scientific workers, instructors and students of physics and chemistry. It may also be used by engineers and technicians employing molecular spectroscopy.

COVERAGE: The collection of articles describes spectroscopic studies of liquids and solutions, and includes data on applied molecular spectroscopy. Individual articles deal with the molecular interaction in solutions, and specifically with the hydrogen bond problem. Works on the optimum utilization of spectral apparatus and on the analytical application of molecular spectroscopy are also included. Aspects of the structure of high and low molecular compounds and of molecular complexes are also covered. The collection was published in honor of the 70th birthday of Professor Vladimir Mikhaylovich Chulanovskiy, Soviet specialist in molecular spectroscopy and spectral analysis. There are no references.

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1/2

S/190/61/003/008/010/019
B110/B218

15.8530

AUTHOR: Gol'denberg, A. L.

TITLE: Variations of the infrared spectrum of polypropylene as a consequence of thermal treatment

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 8, 1961, 1224-1230

TEXT: It was the aim of the present work to study the variations in isotactic propylenes (PP) which occurred on rolling at 170°C. For this purpose, the infrared spectrum was recorded by means of an IKS-11 (IKS-11) spectrometer with NaCl prisms (700 - 2000 cm^{-1}) and LiF prisms (2000 - 2800 cm^{-1}), and by means of a Hilger spectrometer H-800 (quartz prisms, 2800 - 6000 cm^{-1}). Results are given in Table 1 and Fig. 1. In accordance with literature, the following was suggested for the carbonyl groups (ν in cm^{-1}): 1690 for -CH=CH-C$\overset{O}{<}$; 1707 for -C$\overset{O\cdots H-O}{<}$C$<$;

Card 1/

S/190/61/003/008/010/019
B110/B218

Variations of the infrared spectrum ...

1720 for $-CH_2-C^{O}-CH_2-$; 1733 for $-CH_2-C^{O}_{H}$; 1760 for $-CH_2-C^{O}_{O-H}$, and $-CH_2-C^{O}_{O-O-H}$; and 1780 for $-CH_2-C^{O}_{O-O-CH_2-}$. A possible frequency shift of the C=O group due to conjunction with C=C or formation of H bonds is mentioned. When melting PP absorption decreases in the interval of 1690 - 1730 cm^{-1}, and increases in the interval of 1750 - 1800 cm^{-1}. The total number of carbonyl groups (predominantly keto groups) increases after 20 min rolling at 170°C from 0.1% to 0.5%, and attains 1% after 40 min rolling. PP rolled for 20 min was stored for 1 year and 9 months at room temperature in the dark. During that time, the number of carbonyl groups had doubled, while no oxidation occurred in the case of non rolled PP. Apart from the formation of carbonyl groups, also OH groups had formed. After 20 min rolling, the bands became 2-3 times more intensive in the interval of 3300 - 3500 cm^{-1}. The content in OH groups was estimated ~1% after 20 min rolling. The decrease in intensity of the OH

Variations of the infrared spectrum ...

bands of the molten PP is explained by the binding of the OH group to intramolecular H bonds. Based on the infrared spectra, the action of antioxidants was studied: (1) In the presence of 0.3% of a mixture of phenyl-α-naphthylamine and diphenyl-p-phenylenediamine (2:1), the number of carbonyl groups only increased from 0.1 to 0.15% after 1.5 hr rolling at 170°C. (2) In the presence of 0.2% of dicresylic propane, the number of carboxyl groups amounted to only 1/3 after 1 hr rolling, and in the presence of 0.2% of [illegible]-24 (P-24) (reaction product of styrene and phenol), it was only 1/4 of the quantity of PP without a stabilizer. The author thanks V. M. Chulanovskiy for advice, Ye. M. Antokol'skaya and N. P. Lazareva for the propylene samples, and G. A. Nosayev for the tertiary butylhydroperoxide. There are 2 figures, 2 tables, and 27 references: 10 Soviet and 17 non-Soviet. The three most important references to English-language publications read as follows: Ref. 7: W. Heinen, J. Polymer Sci., 38, 545, 1959; Ref. 17: E. R. Stephens, R. L. Haust, R. C. Doerr, Anal. Chem., 29, 776, 1957; Ref. 18: W. H. Davison, J. Chem. Soc., 1951, 2456.

26297
S/190/61/003/008/010/019
B110/B218

Variations of the infrared spectrum ...

ASSOCIATION: Nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass (Scientific Research Institute of Polymer Plastics)

SUBMITTED: November 28, 1960

Table 1. Relative intensity variations of the absorption bands of PF in the region of 800 - 1300 cm^{-1}. Legend: (a) $K^{1)}$ before rolling; (b) 20 min rolling; (c) 40 min rolling; (1) K = 1/dD; D = optical density, d = thickness of sample, cm; (2) relative band intensity as compared to the intensity of the initial sample taken as a unit.

ν, $см^{-1}$	K^1 до вальцевания (a)	20 мин. вальцевания[2] (b)	40 мин. вальцевания[2] (c)	ν, $см^{-1}$	K^1 до вальцевания (a)	20 мин. вальцевания[2] (b)	40 мин. вальцевания[2] (c)
810	73	0,9	0,85	1157	70	1,0	0,7
840	140	0,9	0,9	1170	220	1,0	0,85
898	70	0,8	0,75	1217	14	1,2	0,65
942	17	1,0	0,85	1255	37	1,0	0,45
973	250	0,9	0,7	1300	50	1,0	0,4
997	200	0,9	0,7	1378	750	—	—
1045	10	2,15	1,0	1460	730	—	—
1100	15	1,75	0,9				

Table 1

Card 4/6

GOL'DENBERG, A., kand.tekhn.nauk

"Metallography of nonferrous metals" by S.A.Kiselev, G.A.Faivilevich. Reviewed by A.Gol'denberg. Metalloved.i term.obr.met. no.2:61-62 F '62. (MIRA 15:3)

(Nonferrous metals—Metallography)
(Kiselev, S.A.) (Faivilevich, G.A.)

[illegible]
S/191/62/000/006/003/010 [illegible]

AUTHORS: Gol'denberg, A. L., [illegible], [illegible], [illegible]

TITLE: Investigation of the structure of ethylene-propylene copolymers

PERIODICAL: Plasticheskiye massy, no. 6, 1962, [illegible]

TEXT: The paper reports research into the relationship between the branching of propylene-ethylene copolymers ([illegible]) and crystallinity, which determines physicomechanical properties. The copolymer contained up to 50% C_3H_6. Its branching was examined using samples [illegible] thick and an IKS-11 (IKS-11) spectrometer with an NaCl prism. The number of CH_3 groups per 100 carbon atoms was found from the intensity ratio of the 1378 and 1465 cm^{-1} absorption bands. The degree of crystallinity was determined from X-ray diffraction curves obtained with an [illegible] ([illegible]) apparatus. It was found that the degree of crystallinity increased almost linearly with decreasing number of CH_3 groups. The crystallinity and

Card 1/2

Investigation of the structure ... [illegible]

density of copolymers containing [illegible] substantially higher than for high-density polyethylene ([illegible]), or low-density polyethylene (50-70% crystallinity), as branching of ethyl and butyl is present in the latter. For less than [illegible] CH_3 groups the X-ray pictures of copolymers and polyethylene differ only in crystallinity. For [illegible] CH_3 groups the crystallinity falls and the diffraction pattern is shifted toward larger interplane distances. Examination under an electron microscope revealed greater formations of spherulites in polyethylene than in the copolymer. Crystallinity and density thus decrease as the number of propylene links in the macromolecular increases. It was established by examining the crystallinity by infrared absorption spectra that the 730 cm^{-1} absorption band increased almost linearly with crystallinity while the 1302 cm^{-1} band decreased non-linearly. There are 6 figures.

Card 2/2

S/126/62/013/006/003/003
E193/E383

AUTHOR: Gol'denberg, A.A., Candidate of Technical Sciences,

TITLE: Ukrainian Republic conference on ordering of atoms and its effect on the properties of alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 6, 1962, 59 - 60

TEXT: This conference was held in Kiyev from April 17-21, 1962 and was concerned with the effect of ordering on the properties of special alloys, including ferromagnetics, ferrites, semiconductors, heat-resistant ordering alloys and materials possessing superconductive properties. The main subjects were covered by the following papers:
V.I. Iveronova "X-ray studies of alloys";
A.A. Smirnov "Theory of electrical conductivity of ordering alloys";
M.A. Krivoglaz "Theory of scattering of X-rays and low-energy neutrons in ordering alloys";
L.I. Vasil'yev "Ordering and strength of alloys";
Z.G. Pinsker "Structural theory of ordering".
Card 1/3

S/189/62/000/003/003/003
B193/B363

Ukrainian Republic ....

It was generally agreed in the following discussion that progress in studies of the formation of superstructures depended on application of the most modern experimental techniques and that the following problems should be given priority in future research work: a) quantitative determination of the degree of long- and short-range order in antiphase domains in solid solutions; b) studies of ordering in ferrites, semiconductors, superconductive materials and heat-resistant compounds; c) investigation of the effect of orientation of externally applied electromagnetic and elastic fields on the formation of the superstructure in alloys; d) studies of the kinetics of the order-disorder transformations at accelerated heating and cooling rates; e) studies of the effect of crystal-lattice defects on the ordering processes and mechanical properties of ordered alloys; f) studies of the relationship between ordering and other solid-state transformations in alloys; g) studies of the properties of ordering solid solutions by methods combining various modern experimental techniques.

Card 2/3

Ukrainian Republic ....

S/129/62/000/008/003/003
E193/E383

Theoretical studies should be concerned with the following subjects: a) development of the dislocation theory as applied to ordering alloys; b) theoretical construction of constitution diagrams of alloys with various crystal structures, including multiphase alloys; c) development of statistical theories of ordering processes which would take into account factors governing the behaviour of aggregates of atoms; d) investigation of the properties of the thermodynamic potential at a point corresponding to phase transformations of the second type; e) examination of systems in which the energy of ordering depends on various types of chemical interaction between atoms; f) theoretical analysis of the kinetics of ordering; g) studies of scattering of waves of various types on the crystal lattice of ordered alloys; h) application of methods based on the quantum-field theory to static and kinetic problems in the theory of alloys.

Card 3/3

S/191/63/000/004/002/015
B101/B186

AUTHORS: Matveyeva, Ye. N., Kozodoy, A. A., Gol'denberg, A. L.

TITLE: Ageing of polyolefins. The relative light resistance of polyolefins

PERIODICAL: Plasticheskiye massy, no. 4, 1963, 7 - 11

TEXT: This is a report on the ageing of high-density polyethylene (HDPE), low-density polyethylene (LDPE), ethylene-propylene copolymer (EPC), and polypropylene (PP) when irradiated with a mercury vapor lamp at 25 - 28°C or weathered in the climatic regions of Tashkent and Leningrad. The change in relative elongation and tensile strength was studied, as well as tan δ at 10^6 cps, and the amount of the fraction insoluble in xylene. Furthermore, the content of CO groups was studied by the IR spectrum, and the change in intrinsic viscosity in decalin at 135°C. Results: Irradiation with UV light rapidly deteriorated all physico-mechanical properties. Brittleness occurred after 50 - 70 hrs in PP, 70 - 100 hrs in LDPE, 100 - 150 hrs in EPC, and 150 - 200 hrs in HDPE. The content of CO groups increased from 0.4 - 0.6 mg/dm^2 in the initial specimen to 7.8 - 9.9 mg/dm^3.
Card 1/2

Ageing of polyolefins. The... S/191/63/000/004/002/015
B101/B186

Simultaneously the intrinsic viscosity decreased. In contrast with other polymers, HDPE formed a fraction insoluble in xylene, which reached a content of 40% after 25 hrs and remained unchanged on further irradiation. As regards stability the polymers form the following sequence: PP < LDPE < EPC < HDPE. Weathering causes the same changes in physico-mechanical properties as UV light, the sequence of stability remaining unchanged. In Tashkent, ageing was 1.2 - 2 times faster than in Leningrad. The content of insoluble fraction in HDPE reached approximately 35% after 60 days but was decreased by longer weathering. The most intensive changes occurred during the months of most intensive sunshine, namely April - October. There are 12 figures and 3 tables.

Card 2/2

L 13518-63 EPF(c)/EWP(j)/EWT(m)/BDS AFFTC/ASD Pr-4/Pc-4 RM/WW

ACCESSION NR: AP3001149 S/0190/63/005/006/0816/0821

AUTHOR: Gol'denberg, A. L.

TITLE: Infrared study of the chemical changes occurring in polyethylene during flame spraying

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 6, 1963, 816-821

TOPIC TAGS: flame spraying, polyethylene, oxidation, carbonyl

ABSTRACT: The samples for the present investigation were obtained by flame spraying polyethylene by means of an air-acetylene mixture on steel sheets, from which films of 0.02-0.5 mm thickness were produced. These were subjected to infrared spectrometric studies where the degree of oxidation and unsaturation and the methyl groups were determined. The degree of structuration was determined by the same means on samples extracted with boiling xylene. It was found that in the flame-sprayed polyethylene the number of carbonyl groups increased fourfold, of which 60% were ketone groups. The formation of associated hydroxyl groups and of -C-O- groups was also established. The degree of oxidation in the xylene-insoluble fraction of flame-sprayed polyethylene was 1.5 times higher as compared with the soluble one. The absorption spectra of flame-sprayed polyethylene showed an increased

Card 1/3

L 13518-63

ACCESSION NR: AP3001149

intensity of the 909- and 965-cm^{-1} lines, indicating an increase in vinyl and transvinylene groups, a threefold increase in these, and an almost double increase in total unsaturation. The number of vinylidene groups remained practically unchanged. The increase in methyl groups is insignificant. The author expresses deep appreciation to V. M. Chulanovski for advice and interest in the work, and to Ye. B. Manto for the samples of flame-sprayed polyethylene. Orig. art. has: 2 charts, 1 formula, and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass (Scientific-Research Institute of Polymeric Plastic Materials)

SUBMITTED: 13Nov61	DATE ACQ: 01Jul63	ENCL: 01
SUB CODE: 00	NO REF SOV: 012	OTHER: 018

Card 2/2

L 12427-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW
ACCESSION NR: AP3001165 S/0190/63/005/006/0905/0909

68
66

AUTHOR: Gol'denberg, A. L.; Lyubetskiy, S. G.

TITLE: Comparative spectral study of unsaturation in polyethylene

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 6, 1963, 905-909

TOPIC TAGS: spectral study, unsaturation, polyethylene, polymerization, radical polymerization, catalytic polymerization

ABSTRACT: The objective of the present investigation consisted in conducting a comparative infrared spectral study of the unsaturated groupings and the degree of branching of polyethylenes obtained by radical polymerization, catalytic polymerization with the participation of a complex metalloorganic catalyst, as well as under the effect of a chromic catalyst on an alumo-silicate catalyst. In the radical polymerization of ethylene by dinitrylazoisobutyrate at 70C fewer double bonds were recorded as compared with the other agents, and of these not over 10% were of the vinyl category, the number of vinylidene groups being almost ten times higher. Where the process is conducted at higher temperatures, structures of the latter type are prevailing. The authors express their thanks to V. M. Chulanovskiy and B. L. Yerusalimskiy for valuable advice and help in the present work. Samples of

Card 1/2

L 12427-63

ACCESSION NR: AP3001165

2

butylperoxide were supplied through the courtesy of the laboratory headed by M. V. Ry*sakov. Orig. art. has: 5 formulas, 2 charts, and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut polymerizatsionny*kh plastmass (Scientific Research Institute of Polymerized Plastic Materials)

SUBMITTED: 12Dec61	DATE ACQ: 01Jul63	ENCL: 00
SUB CODE: 00	NO REF SOV: 012	OTHER: 007

Card 2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

L 9951-65 EWT(l)/EWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EEC(b)-2/EWA(m)-2 Pz-6/
Po-4/Pab-24/Pi-4 LJP(c)/AFWL/ESD(gs)/AFETR/ESD/ASD(a)-5/ESD(t)/RAEM(t) AT
ACCESSION NR: AP4045490 S/0109/64/009/009/1675/1679

AUTHOR: Gol'denberg, A. L.; Petelin, M. I.

TITLE: Focusing electron beams by periodic electro- and magnetostatic fields

SOURCE: Radiotekhnika i elektronika, v. 9, no. 9, 1964, 1675-1679

TOPIC TAGS: electron beam, electron beam focusing, electrostatic field, magnetostatic field

ABSTRACT: The focusing of a thin beam of electrons moving along a plane periodic trajectory under the influence of a 3-dimensional periodic electro- or magnetostatic field is theoretically considered. The problem of investigation of the stability of the periodic trajectory can be reduced to solving two of Hill's independent equations. A simple method is developed for qualitative evaluation of the maximum current which can be focused by the specified periodic field. The equations given in the article may be used for investigating electron beam-

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

L 9951-65

ACCESSION NR: AP4045490

wave interactions, type ubitron electron-wave devices, and for synthesizing the sources of a static field which would ensure the stable motion of electrons over a specified periodic trajectory. Orig. art. has: 1 figure and 30 formulas.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet (Gor'kiy State University)

SUBMITTED: 10Jul63 ENCL: 00

SUB CODE: EC NO REF SOV: 000 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4

L 19447-65 SSD/SSD(c)/AFWL/ASD(a)-5/AFETR/RAEM(a)/ESD(gs)/ESD(t)

ACCESSION NR: AP4048883 S/0109/64/009/011/1987/1993

AUTHOR: Gol'denberg, A. L.; Petelin, M. I.

TITLE: Instability of periodic electron beams with respect to h-f electromagnetic disturbances

SOURCE: Radiotekhnika i elektronika, v. 9, no. 11, 1964, 1987-1993

TOPIC TAGS: electron beam, electron beam stability

ABSTRACT: The interaction is theoretically analyzed of electromagnetic waves with stationary periodic curvilinear electron beams which are focused by periodic static (electric or magnetic) fields. It is proven that a build-up of r-f oscillations in the beam is possible in such a system; the r-f field and, therefore, any deviation of electrons from the stationary path exponentially grow along the waveguide. Beam instability due to longitudinal, transverse, and combined bunchings (with respect to the stationary path) is investigated. "The authors wish to thank

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515620008-4"

L 19447-65

ACCESSION NR: AP4048883

A. V. Gaponov for his constant attention to the work." Orig. art. has: 34 formulas.

ASSOCIATION: none

SUBMITTED: 10Jul63 ENCL: 00

SUB CODE: EC NO REF SOV: 007 OTHER: 002

Card 2/2

L 27737-65 EWT(m)/EIF(c)/T/EWP(j)/EPR Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP5004307 S/0191/65/000/002/0009/0012

AUTHOR: Shalayeva, L. P.; Domareva, N. M.; Andreyeva, I. N.; Veselovskaya, L. N.; Nikolayeva, I. I.; Gol'denberg, A. L.

TITLE: Study of the polydispersity and structure of an ethylene-propylene copolymer

SOURCE: Plasticheskiye massy, no. 2, 1965, 9-12

TOPIC TAGS: ethylene copolymer, propylene copolymer, polyolefin synthesis, polymer structure, polydispersity, Ziegler catalyst, polymer fractionation, polymer molecular weight

ABSTRACT: Ethylene and propylene were solution-polymerized in the presence of a Ziegler catalyst in order to study the molecular weight distribution, composition and intrinsic viscosity of the copolymer and the mutual effects of molecular weight and viscosity. The monomers were polymerized at 4-5 atm. with triethylaluminum-titanium tetrachloride to form a copolymer containing 4-10 mol.% propylene, determined spectrographically from the methyl group concentrations. The intrinsic viscosity was measured in decalin solution on a capillary viscometer at 135C, the weight-average molecular weight was determined with an optical

Card 1/2

L 27787-65
ACCESSION NR: AP5004307

nephelometer at 140C in α-chloronaphthalene, and the polymer was fractionated by precipitation with the solvent-pair tetralin-triethylene glycol. The molecular weight distribution was shown to be similar to that of low pressure polyethylene and to be described satisfactorily by Tung's distribution functions (Journ. Polymer Science v. 24, 1957, 333). The molecular weight of the fractions decreased with increasing content of propylene links. Fractionation was shown to proceed both by copolymer composition and by molecular weight. The studied specimen did not indicate a direct dependence of molecular weight on intrinsic viscosity, and the latter parameter is not recommended for determining the molecular weight in this type of copolymer. Orig. art. has: 5 tables, 5 figures and 2 formulas.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: OC

NO REF SOV: 003 OTHER: 005

Card 2/2

SEMENOVA, A.S.; PARAMONOV, Ye.Ya.; PELOTOV, B.G.; GOL'DENBERG, A.L.; IL'CHENKO, P.A.; CHAPLINA, A.N.; SKURIKHINA, L.S.; SAZHIN, B.I.; MATVEYEVA, Ye.N.; KOZOLA, A.A.; DYN'KINA, G.M.; SIROTA, A.G.; RYBIKOV, Ye.P.; GERMILSKIY, I.A.; SEGRUTSKIY, S.V., red.; SHUR, Ye.I., red.

[Medium pressure polyethylene] Polietilen srednego davleniia. Moskva, Khimiia, 1965. 80 p. (PlnA 18:7)

1. Nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass (for all except Segrutskiy, Shur).