Physical Principles of Magnetic Sound Recording (Cont.)

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Physical Principles of Magnetic Sound Recording (Cont.)

Physical Principles of Magnetic Sound Recording (Cont.)

Physical Principles of Magnetic Sound Recording (Cont.)

Call Nr: AF 1154945

Physical Principles of Magnetic Sound Recording (Cont.)

AVAILABLE: Library of Congress

Card 12/12

Russet, L. A.

25(2) PHASE I BOOK EXPLOITATION SOV/2564

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov

Trudy, tom 18, vyp. 69 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on the Theory of Machinery and Mechanisms, Vol 18, No. 69) Moscow, Izd-vo AN SSSR, 1958. 69 p. Errata slip inserted. 2,500 copies printed.

Ed. of Publishing House: V.R. Beylin; Tech. Ed.: N.F. Yegorova; Editorial Board: I.I. Artobolevskiy, Academician (Resp. Ed.); G.G. Baranov, Doctor of Technical Sciences, Professor; V.A. Gavrilenko, Doctor of Technical Sciences, Professor; V.A. Zinov'yev, Doctor of Technical Sciences, Professor; A.G. Kobrinskiy, Doctor of Technical Sciences; N.I. Levitskiy, Doctor of Technical Sciences, Professor; N. P. Rayevskiy, Candidate of Technical Sciences; L.N. Reshetov, Doctor of Technical Sciences, Professor; and M.A. Skuridin, Doctor of Technical Sciences, Professor.

Card 1/4

PURPOSE: This book is intended for engineers interested in the theory of machinery and mechanisms.

COVERAGE: This collection of scientific papers deals with the synthesis and analysis of types of linkage, an investigation of vibratory mechanisms, and methods of calculating the nonunformity of tape movement in tape-feeding mechanisms of memory units. References follow several of the articles.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

GO/mg
12-7-59

PUSSET, L. [redacted]:

Investigating the reproduction process of magnetic phonograms. (MIRA 12:3)
Trudy VNAIZ no.2:56-70 '57.
(Magnetic recorders and recording)

9(2) SOV/112-59-4-8185

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 4, p 257 (USSR)

AUTHOR: Russet, L. A.

TITLE: Elements of the Theory of the Tape Winding Mechanism of a Three-Motor Tape Recorder

PERIODICAL: Tr. Vses. n.-i. in-ta zvukozapisi, 1957, Nr 1, pp 5-28

ABSTRACT: An investigation of a 3-motor tape-transport mechanism is presented. The objectives of the investigation included finding the influence of various components of the mechanism upon the disturbing forces that cause tape-speed fluctuations at the magnetic heads; another objective was to develop methods of designing such mechanisms. The mechanism is presented as a set of progressively-moving masses connected by an elastic magnetic tape; the masses are acted upon by external forces and they work against mechanical resistances. Hook's law was considered applicable to the tape material. These simplifying assumptions were made: distributed tape elasticities were

Card 1/2

Elements of the Theory of the Tape Winding Mechanism of a Three-Motor . . . .

replaced by a concentrated elasticity; all variable mechanical resistances are linearly dependent on the velocity of the corresponding mass. On these grounds, the mechanism is considered as a linear dynamic system with a finite number of the degrees of freedom. An instantaneous condition of this system is characterized by the translation of tape points rigidly connected with the modified masses and their velocities. An analysis of perturbing forces that cause tape-velocity fluctuations due to eccentricity of driven and driving members is made. A complete electrical analog of the mechanism was set up. The relation between the degree of stabilization of the tape velocity and the electric-analog elements was established; on this basis, the velocity stabilization was connected with the structural parameters of the mechanism. The mechanism design procedure is outlined.

G.S.V.

Card 2/2

PUSSET, L.A.

Evaluating the irregularity of tape motion in tape-winders.
Trudy Inst.mash.Sem.po teor.mash. 18 no.69:52-70 '58.
(MIRA 12:5)

(Mechanical movements)
(Tape recording)

AUTHOR: Pusset, L. A. (Moscow) 103-19-6-6/13

TITLE: Speed Control of a Synchronous Reactive Motor in Systems With Exact Magnetic Recording (O regulirovanii skorosti sinkhronnogo reaktivnogo dvigatelya v sistemakh tochnoy magnitnoy zapisi)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 6, pp 574 - 581 (USSR)

ABSTRACT: The stability of a system of automatic speed control in synchronous motors is investigated here and some recommendations concerning the selection of the parameters of this system are given. As far as almost exclusively reactive synchronous motors are used in magnetic recording devices the statements refer to this type of motor. The condition for the stability of the control process in the case of the use of a phase-sensitive element of the electronic and the electromechanical type is derived. It is assumed that changes in scale with respect to time as a consequence of unequal band-deformation take place so slowly that the motor remains synchronous during the entire control process. With the taking into account of all data customary in such investigations equation (1) for the rotor motion is written

Card 1/2

Speed Control of a Synchronous Reactive Motor in Systems 103-19-6-6/13
With Exact Magnetic Recording

down. On the assumption that the control system is linear and that the changes in scale with respect to time along the band take place sinusoidally formula (2) is written down. The set of equations (7) is derived and it is shown that a periodic solution of the system (6) which becomes identically equal to zero in the case of $\mu = 0$ exists. The stability conditions for the solution are found. It is shown that the condition for the existence of an asymptotic stability of the periodic solution of the system (7) in the case of sufficiently small μ is the presence of negative real parts in all roots of the fundamental equation (8).- The system used abroad for exact magnetic recording on a non-perforated band (as phase-sensitive element) is described.- At the end the advantages of the use of an electromechanical phase-sensitive element instead of a simple circuit diagram of a phase-discriminator are shown. There are 3 figures and 7 references, 3 of which are Soviet.

SUBMITTED: March 9, 1957
Card 2/2 1. Synchro motors--Control systems

PA 165T107

PUSSET, L. A.

USSR/Physics - Diffraction Aug 50

"Diffraction of Homocentric Ray," L. A. Pusset

"Zhur Eksper i Teoret Fiz" Vol XX, No 8, pp 722-728

Pusset gives rigorous solution of subject problem for a ray near the focus for any wave length. Shows that light field near focus is completely determined by given distribution of intensity and polarization on contour of illuminated part of sphere of sufficiently large radius described from center of ray. Submitted 7 Jan 50.

165T107

FDD

ARNOL'D, N.R.; APOLLONOVA, L.P., red.; VAYNBOYM, V.S., red.; VASILEVSKIY, D.P., red.; VROBLEVSKIY, A.A., red.; GRIBKOVA, G.L., red.; GRIGORASH, G.L., red.; KAZANSKIY, B.Ye., red.; PARKHOMENKO, V.I., red.; PUSSET, L.A., red.; PYTIRA, Ye.I., red.; ROZENBLAT, M.A., red.; MALKIYEL', S.A., red.

[Materials for sound recording apparatus] Magnitnye golovki dlia apparatury zvukozapisi. Moskva, 1958. 153 p. (Moskva. Vsesoiuznyi nauchno-issledovatel'skii institut zvukozapisi. Trudy, no.3). (MIRA 12:4)

(Magnetic recorders and recording--Equipment and supplies)

PARFENT'YEV, Andrey Ivanovich; PUSSET, Lev Alekseyevich; MARSOV, S.V., redaktor; AKHLAMOV, S.N., tekhnicheskiy redaktor.

[Physical principles of magnetic sound recording] Fizicheskie osnovy magnitnoi zapisi zvuka. Moskva, Gos.izd-vo tekhniko-teoret. lit-ry, 1957. 323 p. (MIRA 10:11)
(Magnetic recorders and recording)

CERNIGOJ, B.; SELJAK, Z.; NOVAK, P.; PUST, J.; MUREN, H.; OPRESNIK, M.; KUHELJ, A.; HLEBANJA, J.; KRUSIC, B.; POVSE, R.; KRAUT, B.; PROSENC, V.; PRELOG, E.

Book reviews. Stroj vest 10 no.6:176-182 D '64.

PUST, J.

"Theory of mechanisms" by K. Hain. Reviewed by J. Pust. Stroj vest 9 no.4/5:130 0 '63.

PUST, L.

L. Pust, "The Influence of Non-Linear Spring Characteristics on the Vibrations of Machine Foundations."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

UŠT, L.

Mountain pressure in two parallel roadways. p. 175.
TEHNIKA. TEHNOLOŠKI ZBORNIK, Ljubljana, No. 3/4, 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

PUST, Tatjana

Gorenja Vas has an automatic telephone exchange. PTT zbor 16 no.11:256 N '62.

PUST, J.

"Introduction to the principles of regulation." Reviewed by J.Pust. Stroj vest 8 no.1/2:33 Ap '62.

PUST, Ladislav, inz., C.Sc.

Effect of gyroscopic moments on the rolling of barrel-shaped rollers in roller bearings. Stroj cas 12 no.6:348-354 '61.

1. Ustav pro vyzkum stroju Ceskoslovenske akademie ved, Praha.

Must, 4

Vsesoyuznoye soveshchaniye po osnovnym problemam teorii mashin i mekhanizmov. 2d, Moscow, 1958

Dinamika mashin; sbornik statey (Dynamics of Machines; Collection of Articles) Moscow, Mashgiz, 1960. 240 P. (Its: Trudy) Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Institut mashinovedeniya Akademii nauk SSSR.

Editorial Board: I. I. Artobolevskiy (Resp. Ed.) Academician, S. I. Artobolevskiy, Doctor of Technical Sciences, Professor, G. G. Baranov, Doctor of Technical Sciences, Professor, A. P. Bessonov, Candidate of Technical Sciences, V. A. Gavrilenko, Doctor of Technical Sciences, Professor, A. Ye. Kobrinskiy, Doctor of Technical Sciences, N. I. Levitskiy, Doctor of Technical Sciences, Professor, and L. N. Reshetov, Doctor of Technical Sciences, Professor;

Ed.: L. V. Baranova, Candidate of Technical Sciences; Managing Ed. for General Technical Literature and Literature on Transport Machine Building (Mashgiz)

A. P. Kozlov, Engineer; Tech. Ed.: B. I. Model'.

PURPOSE: This collection of articles is intended for engineers, designers, workers at scientific research institutes, and instructors at schools of higher technical education.

COVERAGE: This collection consists of reports presented at the All-Union Conference on Problems in the Theory of Machines and Mechanisms held in Moscow in 1958. The reports discuss several problems of the dynamic design of complex mechanical systems. No personalities are mentioned. References accompany most of the articles.

AVAILABLE: Library of Congress (TJ181.V8 1958)

AC/rsm/ec
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Card 6/6

L 20700-65 ASD(a)-5/ASD(f)-3/RAEM(a)/ESD(c)/RAEM(i)/ESD(gs)

ACCESSION NR: AR4047550 S/0124/64/000/008/A020/A020

SOURCE: Ref. zh. Mekhanika, Abs. 8A120

3
B

AUTHOR: Pust, L.

TITLE: Transition through the resonance region in mechanical oscillating systems with allowance for the effect of the vibrator

CITED SOURCE: Tr. Mezhdunar. simpoziuma po nelineyn. kolebaniyam, 1961, T.3. Kiyev, AN USSR, 1963, 398-408

TOPIC TAGS: oscillator, mechanical vibration, resonance, transient vibration mode, nonlinear damping

TRANSLATION: A study is made of transient modes in the transition through the resonance region for systems having a single degree of freedom with nonlinearity caused by the properties of the vibrator, or which contain a nonlinear spring and damping, or both together. The method of investigation presupposes small changes in the amplitude or phase angle as a function of frequency in comparison with the same changes under conditions of steady-state resonance. In the analysis of the transients in the oscillating systems,

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ACCESSION NR: AR4047550

the author succeeds in establishing with relative simplicity the interrelation between amplitude, phase angle, angular velocity, angular acceleration, the vibrator moment and the method in which the energy is fed to the system. With respect to the latter point (i.e., the energy feed system), suggestions are given on the selection of a suitable method or arrangement, as well as on the determination of the speed with which the transition through the individual frequency regions must be accomplished in order to ensure the required characteristics of the resonance amplitude and phase curves.
A.R. Rokhov

SUB CODE: ME ENCL: 00

Card 2/2

L 18359-65
ACCESSION NR: AT4049212 P/2519/64/000/005/0178/0192

(2)

AUTHOR: Pust, L. (Prague)

341

TITLE: The effect of nonlinear damping on the form of the resonance curves of a system with many degrees of freedom

SOURCE: Polska Akademia Nauk. Instytut Podstawowych Problemow Techniki. Zagadnienia drgan nieliniowych, no. 5, 1964. Druga Konferencja Drgan Nieliniowych (Second Conference on Nonlinear Vibrations), Warsaw, Sept. 18-21, 1962, 178-192

TOPIC TAGS: vibrating system, nonlinear damping, resonance curve, nonlinear elastic force, two mass system

ABSTRACT: The effect of nonlinear damping and nonlinear elastic force on the form of the resonance curves of a system with many degrees of freedom is studied in the first approximation. A detailed analysis is made of a two-mass system including a nonlinear element which can be replaced by a nonlinear spring and a nonlinear absorber. The system is described by the following equations of motion:

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ACCESSION NR: AT4049212

$$m_1\ddot{x}_1+c_1x_1-c_2x_2-ef(\dot{x}_2,\dot{x}_2)=P\cos\omega t,$$
$$m_2(\ddot{x}_1+\ddot{x}_2)+c_2x_2+ef(\dot{x}_2,\dot{x}_2)=0,$$

where x_1 is the absolute displacement of mass m_1, x_2 is the relative displacement of mass m_2 relative to m_1, and P is the amplitude of the disturbing force, which may be constant or a function of the frequency ω : $P = mr\omega^2$. It is shown first that it is sufficient to consider only the first harmonic component of motion. An analysis of the behavior of the first and second resonances of the system indicated the existence of three different types of resonance peaks, depending on the relationships between the form of the characteristic curves of the absorber and of the nonlinear spring. It is shown that the amplitudes of vibrations of such nonlinear damped systems with two degrees of freedom may reach unbounded values. It is stated that this can happen not only in systems damped by Coulomb friction ($P_t = k \operatorname{sign} \dot{x}$) or by a linear damping force ($P_t = k\dot{x}$), but also in systems with absorbers having damping forces proportional to the second and third powers of the velocity ($P_t = k\dot{x}|\dot{x}|$ and $P_t = k\dot{x}^3$), if the nonlinear spring has a suitably increasing characteristic.

Card 2/3

L 18359-65
ACCESSION NR: AT4049212

ASSOCIATION: Institut Mashinnogo Vedeniya, Chekhoslovatskaya Akademiya Nauk, Prague (Institute of Machine Sciences, Czechoslovak Academy of Sciences)

SUBMITTED: 01Sep62 ENCL: 00 SUB CODE: ME, EC

NO REF SOV: 002 OTHER: 004

Card 3/3

PUST, I., inz., CSc.

Model research of dynamic properties of machines. Stroj cas 15 no.5:394-412 '64

1. Institute of Thermomechanics, Czechoslovak Academy of Sciences, Prague.

KOZESNIK, Jaroslav, akademik; PUST, Ladislav

Machine dynamics in the period between two scientific conferences. Vestnik CSAV 73 no. 1: 108-116 '64.

PUST, Ladislav, Ing., C.Sc.

Friction forces and deformations at axial sliding of a roller. Acta techn Cz 6 no.2:162-185 '61. (EEAI 10:6)

1. Tschechoslowakische Akademie der Wissenschaften, Praha.
(Friction) (Deformations (Mechanics))
(Strains and stresses) (Shear (Mechanics))
(Elasticity)

PUST, Ladislav, inz., C.Sc.

Transition of resonance curves in a damped several-degrees-of-freedom system. Stroj cas 14 no.3:230-241 '63.

1. Ustav pro vyzkum stroju, Ceskoslovenska akademie ved, Praha.

PUST, L.

Effect of the properties of a source of the alternating force on oscillations of mechanical systems. In Russian. p. 428

APLIKACE MATEMATIKY. (Ceskoslovenska akademie ved. Matematicky ustav) Praha, Czechoslovakia, Vol. 3, no. 6, 1958

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959 Uncl.

Z/041/61/000/006/002/002
E016/E935

AUTHOR: Půst, Ladislav, Engineer, Candidate of Sciences

TITLE: Influence of gyroscopic moments on rollers in the barrel-type roller bearings

PERIODICAL: Strojnícky časopis, no. 6, 1961, 348-354

TEXT: With increasing rotational speeds attention must be paid to the influence of dynamic forces on the rollers. Whilst at lower speeds it is quite sufficient to consider the bearing from the point of view of kinematics and external forces only, at higher speeds internal dynamic forces can no longer be ignored. Besides centrifugal forces there are gyroscopic moments which tend to tilt the rollers so that their axis is parallel to that of the shaft. Unfavourable rolling conditions, increased friction and overheating of the bearing will result. The author considers the type of bearing with the least frictional loss, i.e. in which the barrelled rollers have only a point contact with each race. In the analysis which follows he derives optimum design conditions in

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order to achieve correct rolling action for both cases considered, i.e. when either the outer or the inner race is rotating whilst the other is stationary. In the geometrical analysis the roller and the races are replaced with conical surfaces which roll over each other without slip. These surfaces pass through the points of contact between the rollers and the races. Expressions for the speed of roller around its own axis, the speeds of the roller relative to the outer and inner races and the speed of the roller axis around the axis of the shaft are thus obtained. These expressions are in terms of the speeds of the outer and inner races and of the geometrical shape of the bearing defined by relevant angles. The author then derives an expression for the arm of the resulting moment acting on the roller, caused by the centrifugal and the gyroscopic moment. This expression is a general one with regard to the shape of the rollers and again involves only the rotational speeds of outer and inner races together with the parameters defining the geometrical shape and arrangement of the bearing. The arm of the moment, acting on the roller and due to the internal

dynamic forces, is then given in a simplified form for the two cases considered, i.e. when the outer or inner race is rotating whilst the other is stationary. On the basis of the above it is shown that, for bearings within the normal geometrical range, the arm of the moment is effectively different for these two cases. Therefore to obtain correct and unhindered rolling action, bearings in the two cases must have a different design arrangement. Conditions required and necessary to obtain the equilibrium of external and internal forces are then derived and discussed. The author comes to the conclusion that the optimum design conditions for correct rolling action can be achieved, in the case when the inner race is rotating, by using non-symmetrical barrelled rollers with the centre of gravity appreciably removed from the greatest cross-section. In the case when the outer race is rotating the barrelled rollers should be symmetrical. Although all the

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conditions may not be entirely satisfied it is possible by this method to get very near to the optimum. There are 4 figures and 6 Soviet-bloc references.

ASSOCIATION: Ústav pro výzkum strojů Československé akademie věd, Praha
(Institute for Machinery Research, Czechoslovak Academy of Sciences, Prague)

SUBMITTED: April 18, 1961

PUST, L., inz., C.Sc.

The 2nd National Conference on Machinery Dynamics. Stroj cas 13 no.2:205-207 '62.

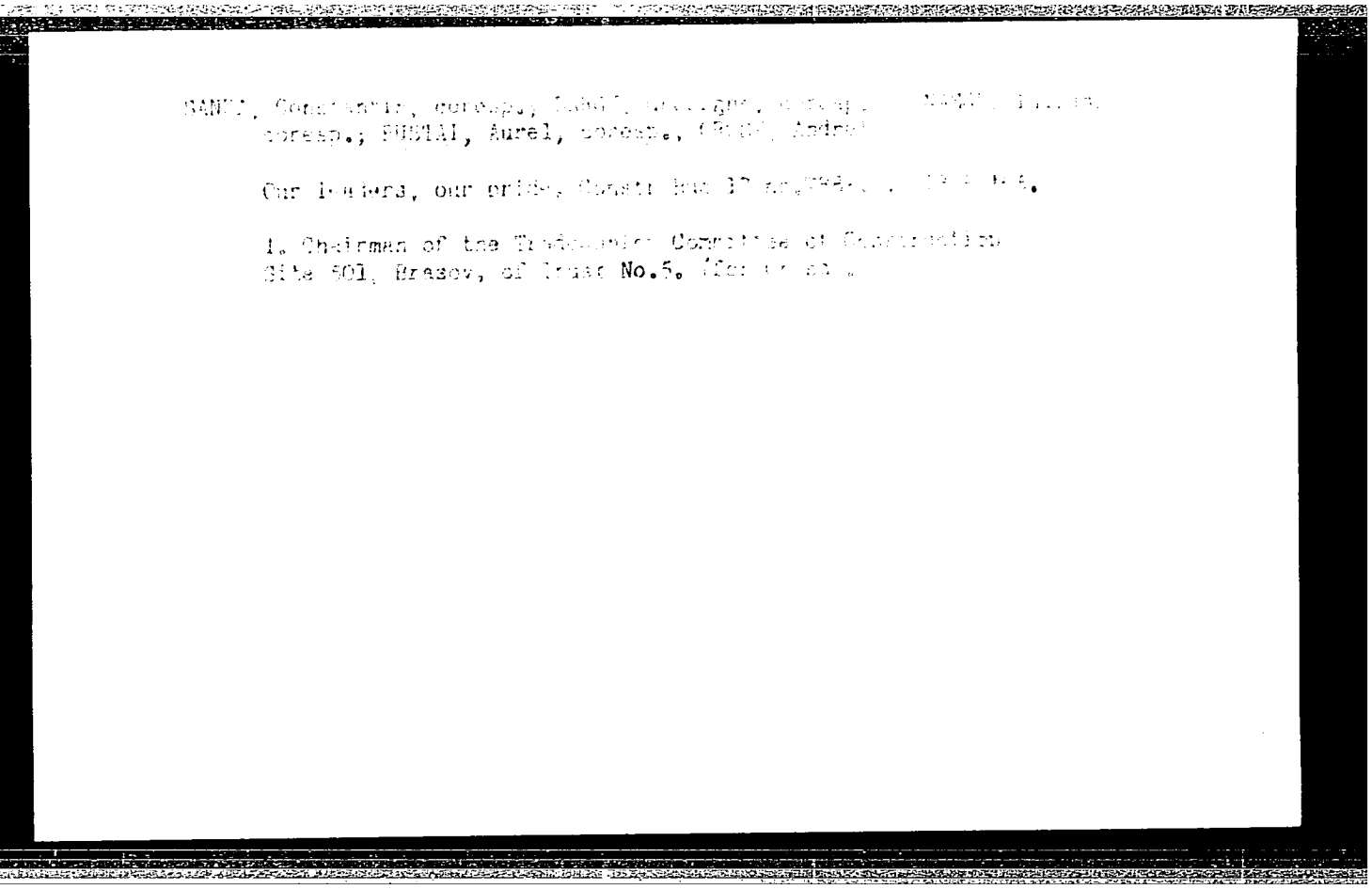
PUST, Ladislav, inz.

Theory of a beam vibration pick-up. Stroj cas 13 no.3:232-243 '62.

1. Ustav pro vyzkum stroju, Ceskoslovenska akademie ved, Praha.

PUST, Ladislav

Mechanics of deformations at high forming rate. Vestnik CSAV 73 no.3:489-490 '64.



NISEL'SON, L.A.; PUSTIL'NIK, A.I.; SOKOLOVA, T.L.

Orthobaric densities and critical parameters of niobium and tantalum pentachlorides. Zhur. neorg. khim. 9 no.5: 1049-1052 My '64. (MIRA 17:9)

MUSAYEV, A.I., gornyy inzh.; PUSTOVALOV, A.I., gornyy inzh.; TSALKIN, V.M., gornyy inzh.

Purification of polluted mine air with a multiflow cyclone. Gor. zhur. no.7:68-69 Jl '64. (MIRA 17:10)

1. Zyryanovskiy svintsovyy kombinat.

BELYAYEVSKIY, N.A., red.; ALI-ZADE, A.A., red.; ALIYEV, M.M., red.; BAKIROV, A.A., red.; BELOUSOV, V.V., red.; BEUS, A.A., red.; BOGDANOV, A.A., red.; BORISOV, A.A., red.; BRENNER, M.M., red.; DYUKOV, A.I., red.; YERSHOV, A.D., red.; ZARIDZE, G.M., red.; KALUGIN, A.S., red.; KOSOV, B.M., red.; KOPTEV-DVORNIKOV, V.S., red.; KOTLYAR, V.N., red.; LUGOV, S.F., red.; MAGAK'YAN, I.G., red.; MARINOV, N.A., red.; MARKOVSKIY, A.P., red.; MALINOVSKIY, F.M., red.; PUSTOVALOV, L.V., red.; SATPAYEV, K.I., red.; SEMENENKO, N.P., red.; TYZHNOV, A.V., red.; KHRUSHCHOV, N.A., red.; SHCHEGOLEV, D.I., red.; YARMOLYUK, V.A., red.

[Materials on regional tectonics of the U.S.S.R.] Materialy po regional'noi tektonike SSSR. Moskva, Izd-vo "Nedra," 1964. 193 p. (MIRA 17:4)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy geologicheskiy komitet.

PUST, Tatjana

The new post office building is put in operation at Radovljica.
PTT zbor 15 no.12:225-226 D '61.

PUST, Tatjana

The post, telegraph, and telephone services of Yugoslavia along the new roads. PTT zbor 16 no.1/2:17-18 F '62.

PUST, Tatjana

The third meeting of the Administrative Committee, Community of the Post, Telegraph, and Telephone Enterprises of Slovenia. PTT zbor 16 no.1/2:18-24 F '62.

PUST, Tatjana

We have elected the Council of Working Collective in the Community of the Post, Telegraph, and Telephone Enterprises of Ljubljana. PTT zbor 16 no.3:62-63 Mr '62.

PUST, Tatjana

First of May. PTT zbor 16 no.4:73 Ap '62.

PUST, Tatjana

Some notes on the vacations of the post, telegraph, and telephone employees. PTT zbor 16 no.5:123-126 My '62.

PUST, Tatjana

Pomurje, also, is included in the system of modern postal, telegraph, and telephone communications. PIT zbor 16 no.12:279-280 D '62.

PUST, Tatjana

Dolenjska has the automatic telephone exchange. PIT zbor 16 no.12: 282-285 D '62.

PUST, Tatjana

The automatic line Ljubljana-Kopar put into operation May 19, 1962. PTT zbor 16 no.6:149-150 Je '62.

PUST, Tatjana

[redacted]the 8th of March. PTT zbor 16 no.3:49 Mr '62.

PUST, Tatjana

A new automatic telephone exchange has been put into operation at Koper.
PTT zhbor 16 no.3:53 Mr '62.

PUSTAI, A.

The cement workers in Turda can work much better.

P. 2, (Constructorul. Vol. 9, no. 395, Aug. 1957, Bucuresti, Rumania)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

GREBENYUK, V.A.; PUSTALOV, A.I.; KOROGOD, G.I.; TAYMAYEV, Zh.T.

Purifying dust-laden air by an aqueous-viscous chip filter. Trudy Alt. GMNII AN Kazakh. SSR 15:59-63 '63. (MIRA 17:3)

ULUKBEKOV, O.K.; BEKTYABAYEV, A.D.; PUSTOVALOV, A.I.; NURGALIYEV, T.

Studying the technological and economic indices of parallel and fan boreholes in systems with ore breaking by levels. Trudy Alt. GMNII AN Kazakh. SSR 15:203-207 '63. (MIRA 17:3)

MARMUREANU, V.; PUSTAN, I.

The quality, problem No. 1. Constr Buc 14 no. 673: 2; 1 December 1962.

1. Inginer-sef al Fabricii "Zorile noi", Piatra Neamt (for Marmureanu).
2. Maistru de productie al Fabricii "Zorile noi", Piatra Neamt (for Pustan.).

PUSTELNIK

POLAND/Chemical Technology - Chemical Products and Their Applications. Cellulose and Cellulose Products. Paper. K-5

Abs Jour : Ref Zhur - Khimiya, No 2, 1958, 6596

Author : Pustelnik, Surewicz
Inst : -
Title : Investigating the Development of the Technology of the Production of Viscose Sulfate Cellulose from Spruce Wood.

Orig Pub : Prace Inst. celul.-papiern., 1957, 6, No 1, 1-15

Abstract : The feasibility of producing cellulose (C) containing 93-95% d-cellulose by subjecting the C to prehydrolysis with acids or steam, or to alkali refining by the cold process is shown. The filterability of the solution of viscose derived from the indicated C will be lower than the filterability of solutions of viscose derived from sulfite C. It is pointed out that, at the presnet time, there are no processes for producing sulfate viscose C

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POLAND/Chemical Technology - Chemical Products and Their Applications. Cellulose and Cellulose Products, Paper. K-5

Abs Jour : Ref Zhur - Khimiya, No 2, 1958, 6596

which would satisfy modern technical and economical requirements.

Card 2/2

Pustelnik, C.

3872 661.728.3 : 676.149 : 633.521

Pustelnik C., Wineznkiewicz A. Investigations Concerning the Suitability of Oil Flax Straw as Papermaking Raw Material. MT

„Badania nad przydatnością słomy lnu oleistego jako surowca papierniczego". (Prace Inst. Celuloz.-Papiern. No. 1), Warszawa, 1954, WPLIS, 14 pp., 7 figs., 1 tabs.

In order to find fibrous raw materials in substitution for linch rags used in high grade papers and tissue papers, detailed investigations were made over the papermaking possibilities of the seed flax straw. As starting material in the investigations, there were used successively: 1) pure bast fibres from oil flax straw; 2) bast fibres containing about 34% shives, 3) the entire oil flax straw, 4) shives. As a result of laboratory scale experiments, including obtaining cellulose paper-making half stuff and cellulose pulps from bast fibres, shives and the entire straw, the following conclusions were reached: 1) pure bast fibres and bast fibres containing shives are a suitable raw material for papermaking half stuff; the half stuff obtained from such raw materials has greater strength properties than the half stuff from linen rags; 2) sulphate pulp obtained from bast fibres containing shives can be used as a substitute for papermaking half stuff; this sulphate pulp has greater strength properties than the half stuff from linen rags, a high alpha-

(OVER)

1

PUSTELNIK, C.

-cellulose content and a low alcohol-benzene extraction; 3) pulp obtained from the entire straw constitutes a poor papermaking raw material — by comparison with rye straw, for instance, oil flax straw requires a great quantity of alkalies in cooking, and gives products with poor strength properties; 4) pulp obtained from shives also gives a poor papermaking material; low strength properties and short fibres in such pulps indicate, that the best use for this material is as filler for lower grades of paper-boards.

2/2

PUSTELNIK, Czeslaw, doc.

Theoretical fundamentals of the screening process. Przegl papier 21 no.3:75-78 Mr '65.

1. Pulp and Paper Institute, Lodz.

Pustelnik, Czeslaw

Seed flax straw as a papermaking raw material. Czeslaw Pustelnik and Andrzej Wieczakiewicz. *Prace Inst. Celul.-Papier.* 3, 1-14(1954).—Lab. pulping expts. were carried out to evaluate seed flax straw as a substitute for linen rags in the manuf. of high-grade papers. Bast fibers shives-free (I), bast fibers contg. about 34% shives (II), whole-seed flax straw (III), and shives alone (IV) were cooked with NaOH, CaO, or kraft liquor. Unbleached pulps produced by NaOH or CaO process had higher strength than linen rag pulps. Bleached kraft pulps from II had also good strength properties, a high α-cellulose content and low amt. of alc.-benzene extractives; they were found suitable as a substitute for linen rag pulps. III gave unsatisfactory pulps; it required a relatively high amt. of alkali and yielded pulps of low strength. Pulp obtained from IV was also of inferior quality and low strength; however, such pulp could be used as a filler for coarse paper or board because IV are of short fiber length. The utilization of I and II in the manuf. of pulp and paper in Poland is discussed.

T. R. Zegree

PUSTELNIK, Czeslaw

(3)

Comparison of two methods for bleaching sulfate pulp. Czesław Pustelnik and Irena Sender-Lapinska. *Prace Inst. Celuloz.-Papier.* 2, No. 2, 11–18(1953).—Lab. expts. were carried out to det. the effectiveness of the Kamyr 6-stage bleaching method (I) as compared with the Valeur 4-stage bleaching method (II) (cf. *C.A.* 46, 6828*b*), both methods having been used on sulfate pulps. I and II produced pulps of about the same strength properties and brightness; however, the consumption of bleaching agents was higher for II. The amt. of Cl to be added in either method in the 1st stage should not be less than 70% of the total amt. of Cl required, whereas the amt. of Cl in the last stage should not exceed 10%. Bleaching of pulps having a high Cl no. appeared advantageous in spite of high consumption of chemicals, since resulting pulps had excellent strength properties.

T. R. Zegree

PUSTELNIK, CZESLAW

H-33

POLAND/Chemical Technology. Chemical Products and Their Application. Cellulose and Its Production. Paper.

Abs Jour: Ref. Zhur-Khimiya, No 11, 1958, 38305.

Author : Pustelnik Czeslaw, Protekta Jerzy
Inst : Not given.
Title : The Extraction of Cellulose from Straw by the Aronovskiy Mechanical-Chemical Method.

Orig Pub: Prace Inst celul-papiern, 1957, 6, No 1, 16-30.

Abstract: Under laboratory conditions, the influence of various factors during the boiling of straw by the Aronovskiy method was investigated: the rise of the hydraulic modulus, the time and temperature of boiling, the quantity of active NaOH and the sulfidization of the cooking alkali as well as the recycling of the coarse alkali dis-

Card : 1/5

POLAND/Chemical Technology. Chemical Products and Their Application. Cellulose and Its Production. Paper. H-33

Abs Jour: Ref. Zhur-Khimiya, No 11, 1958, 38305.

charge and of the mechanical property of cellulose (C); the degree of delignification and the quantity of waste products during the screening of the mass. The optimum conditions of the boiling are the quantity of active alkali (in % of the dry mass of the straw) 10-12%; sulfidization of the alkali $\geq$ 15%; boiling temperature 88-93°; length of boiling 30-60 minutes. A possibility has been shown, in pilot plant conditions, of decreasing the hydraulic modulus from 15 to 9 without deterioration of themechanical properties of C. During the manufacture of wrapping paper (WP) and pasteboard (P), an increase of up to

Card : 2/5

POLAND/Chemical Technology. Chemical Products and Their Application. Cellulose and Its Production. Paper. H-33

Abs Jour: Ref. Zhur-Khimiya, No 11, 1958, 38305.

Bleached C, resulting in "gidropal'pere", shows the advantages of the Aronovskiy over the usual method when its high output is taken into consideration. The mechanical-chemical Aronovskiy method is characterized by a high output of C from aparatus of 1 m^3 capacity in comparison with the process of kettle boiling. Included among the advantages is the great simplicity of the equipment. A relative disadvantage of the Aronovskiy method is the greater need for steam in comparison with the usual method and the Celdecor-Pomilio method and the greater need for energy and chloride in comparison with the process of kettle boiling. The disadvantages mentioned are compensated

Card : 4/5

POLAND/Chemical Technology. Chemical Products and Their Application. Cellulose and Its Production. Paper. H-33

Abs Jour: Ref. Zhur-Khimiya, No 11, 1958, 38305.

for to a significant degree by the saving of raw material with the greater output of C.

Card : 5/5

PUSTELNIK, Czeslaw

H-33

POLAND/Chemical Technology. Chemical Products and Their Application, Part 4. - Cellulose and Its Derivatives, Paper.

Abs Jour: Referat. Zhurnal Khimiya, No 10, 1958, 34663.

Author : ~~Czeslaw Pustelnik.~~
Inst : Not given.
Title : Equipment for Hemicellulose Manufacturing.

Orig Pub: Przegl. papiern, 1957, 13, No 11, 330-344.

Abstract: The equipment necessary for hemicellulose manufacturing is discussed. It is shown what equipment available at the existing cellulose factories can be used in the new industry.

Card : 1/1

POLAND/Chemical Technology - Chemical Products and Their Application. Cellulose and Derivatives. Paper. H-33

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 27251

Author : Pustelnik Czeslaw, Bittmar Wojciech

Inst : Institute of Cellulose and Paper.

Title : Suitability of Some Annual Plants for the Paper Industry

Orig Pub : Prace Inst. celul.-papiern., 1953, 2, No 1, 29-34

Abstract : Results of pulping (by the sulfite method) of a number of annual plants (Papaver somniferum, Althaea rosea, Carthamus tinctorius, Ricinus communis, Camelina saliva, Althaea officianalis, Albanian reed) and mechanical characteristics of the cellulose thus obtained before and after beating.

Card 1/1

PUSTELNIK, Cz.

POL

9207 676.179.022.14(71)

Pustelnik Cz., Bittmar W. On the Usefulness of Certain Annual Plants as Raw Material for the Paper Industry.

„O przydatności niektórych roślin jednorocznych dla przemysłu papierniczego". (Prace Inst. Celuloz.-Papiern. No. 1), Warszawa, 1953, PWT, 8 pp., 7 figs., 6 tabs.

The authors investigated the usefulness of the following annual plants for pulps manufacturing: Ricinus communis, Papaver somniferus, Camelina sativa, Althaea officinalis, Althaea rosea, Carthamus tinctorius and Albanian rush (Latin name unknown). After chemical analysis, the raw material was digested by the sulphate process, and in the case of Carthamus tinctorius by the neutral sodium sulphite process also. The results of cooking are shown in tables. The strength properties of pulps were determined before and after beating to 50°SR. The results of these investigations are shown in tables. The properties which the pulps were shown to possess indicate that the annual plants concerned could be useful in the papermaking and pulp industry. The best results were obtained with Albanian rush, Ricinus communis, Camelina sativa and Althaea officinalis.

PUSTELNIK, C.

POL.

3208 676.1.062.14 : 76.1.023.1

Pustelnik C., Sender-Łapińska I. **Attempts to Determine the Best Conditions for Bleaching Sulphate Papermaking Cellulose Pulps by Means of Chlorine Water and Solutions of Calcium Hypochlorite.**

„Próby ustalenia optymalnych warunków bielenia mas celulozowych siarczanowych papierniczych przy użyciu wody chlorowej i roztworów wapna chlorowanego". (Prace Inst. Celuloz.-Papiern. No. 2), Warszawa, 1953, PWT, 7 pp., 10 tabs.

The authors undertook comparative bleaching by applying two methods (four and six stage bleaching) of sulphate pulps containing varying amounts of lignin. In both cases, the influence of chlorine distribution, in separate stages of bleaching, on strength properties of cellulose pulps was investigated. It was found that both the methods of bleaching mentioned make it possible to obtain pulps with similar strength properties and degree of whiteness. The consumption of bleaching agents in the four stages method is higher than in the six stages method. Tests concerning the best distribution of chlorine showed that

the quantity of chlorine introduced as chlorine water must be not less than 70% of all the chlorine required, while in the last bleaching stage the quantity of chlorine added must not exceed 10%. The bleaching of sulphate pulps of low pulping degree (Sieber number over 60) was found to be advantageous, since in that case bleached pulps with high strength properties are obtained. The experiments were completed with investigations concerning the influence on the strength properties of bleached pulps of pulp viscosity contingent on the distribution of chlorine in separate bleaching stages.

PUSTELNIK, Czeslaw; CHOMIK, Zenon; STUPINSKA, Halina

Beechwood as raw material for Polish cellulose and paper industry. Przegl papier 19 no.12: 386-390 D'63.

1. Instytut Celulozowo-Papierniczy, Lodz.

BITTMAN, BRONISLAW

Poland CA: 47:12809

with WOJCIECH BITTMAR

"Evaluation of some annual plants for paper manufacture."

Prace Inst. Celuloz.-papier. 2, 29-34 (1953).

CA

23

Use of melamine-formaldehyde resins in the production of wet-strength papers. Czesław Pustelnik and Andrzej Wawrzakiewicz. *Przegląd Papier.* 5, 237 6(1949). The lab. evaluation of a Swiss melamine resin CIBA 286 (I), by using unbleached kraft pulp, showed that dry- and wet-strength properties were improved to a small extent. Because of its relatively high price and little advantage gained, the use of I in the Polish paper industry is not recommended.
T. R. Zegrze

1951

TANIEWSKI, M.; PUSTELNIK, D.

Polycondensation of mixtures of mono- and dicarboxylic acids with polyols containing merely α-hydroxyl groups. Polimery tworz wielk 7 no.11:415-418 N '62.

1. Instytut Farb i Lakierow, Gliwice.

JANOWSKI, T. M.; GBURCZYK, J.; PUSTELNIK, J. (Krakow)

Preliminary studies on the influence of microclimate factors upon the fertility of bulls. Rocz nauk roln wet 70 no.1/4:366-367 '60.
(EEAI 10:9)

(Bulls) (Fertility)

HUNGARY/Chemical Technology. Chemical Products and Their Applications. Cellulose and Cellulose Products. Paper. K-5

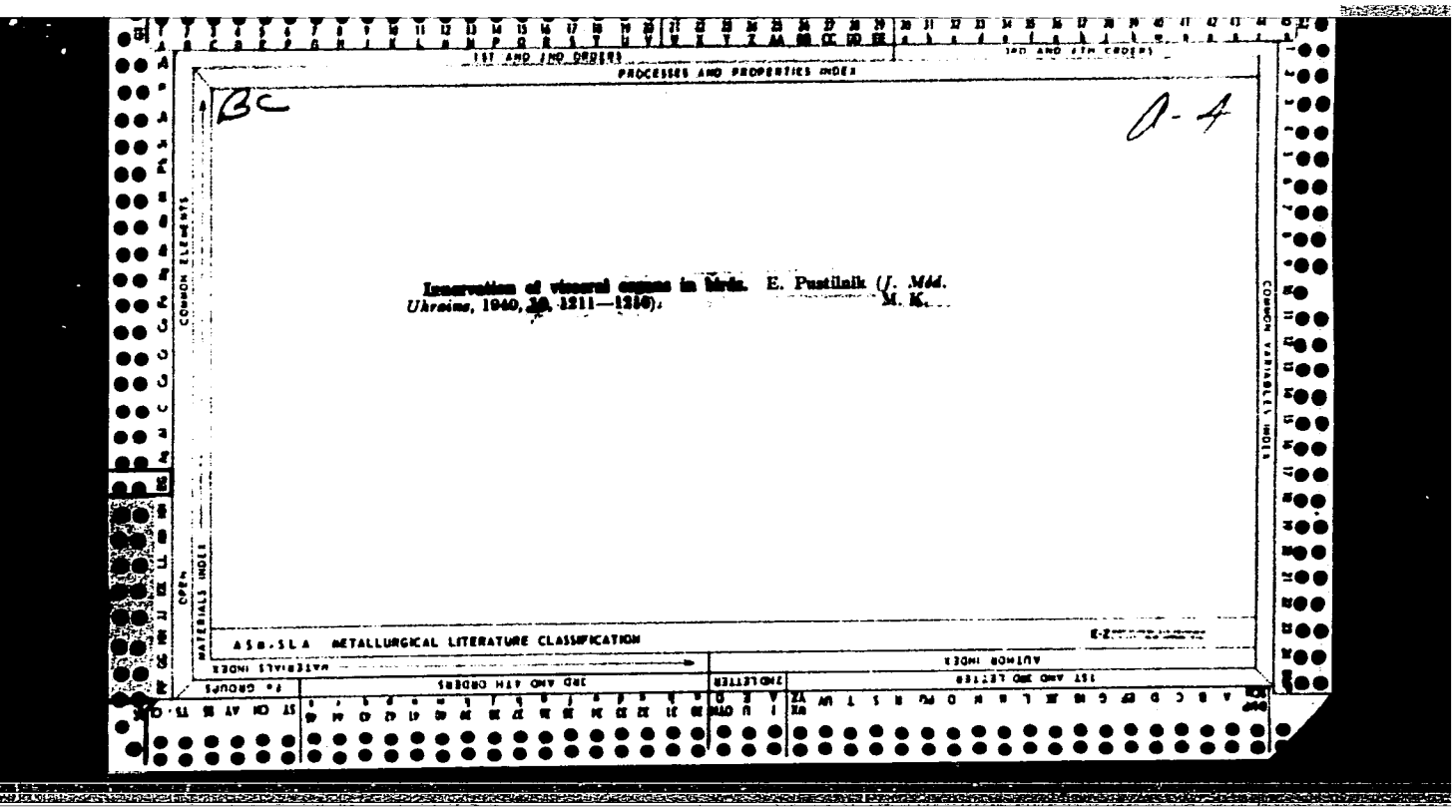
Abs Jour: Ref Zhur-Khimiya, 1958, No 1, 3276.

Author : Pustelnik, Protekta
Inst :
Title : Mechanical and Chemical Method of Producing Cellulose from Rye Straw.

Orig Pub: Papiripar, 1957, 1, No 3-4, 41-51.

Abstract: The optimum conditions for cooking and bleaching wrapping paper which is made with 30% of added straw pulp obtained by the chemical and mechanical method in lieu of sulfate pine pulp, fulfills the technical specifications adopted in Poland. The mechanical and chemical sulfate method is cheaper than the Tsel'dekor-Pomilio method, but produces a lower grade of cellulose.

Card : 1/1



TSYLOV, Yu.A. (Moskva); KORPUSOV, G.V. (Moskva); PUSTIL'NIK, A.I. (Moskva)

Density and viscosity of solutions in the system organic solvent rare-earth metal nitrate solution. Izv. AN SSSR. Met. no.3:59-64 My-Je '65. (MIRA 18:7)

NISEL'SON, L.A. (Moskva); PUSTIL'NIK, A.I. (Moskva); SOSHNIKOVA, L.A. (Moskva)

Separation of selenium from tellurium by distillation. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.2:79-85 Mr-Ap '63. (MIRA 16:10)

ACCESSION NR: AP4036963 S/0078/64/009/005/1049/1052

AUTHOR: Nisel'son, L. A.; Pustil'nik, A. I.; Sokolova, T. D.

TITLE: Orthobaric density and critical parameters of niobium and tantalum pentachlorides.

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 5, 1964, 1049-1052

TOPIC TAGS: niobium pentachloride, tantalum pentachloride, orthobaric density, critical parameter, critical density, critical pressure, critical temperature, niobium tantalum analysis, density temperature relationship, Berthelot equation, liquid vapor phase equilibrium, crystal liquid phase equilibrium

ABSTRACT: The orthobaric density of $NbCl_5$ and $TaCl_5$ throughout the liquid state and in the vapor state, and their critical parameters were determined (fig. 1). The densities of the liquid $TaCl_5$ and $NbCl_5$ and of their mixtures were measured precisely from their melting temperatures (216.2 and 204.2 C, respectively) to 300-320 C. The critical parameters for $NbCl_5$ were: critical temperature 534 C, density d_{crit} 0.68 gm/cm^3, pressure p_{crit} 46 atmospheres; for $TaCl_5$ were: 494 C, 0.89 gm/cm^3 and 43 atmospheres. Since the liquid-vapor phase and the crystal-

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ACCESSION NR: AP4036963

liquid phase equilibria in these pentachlorides are practically ideal and the density of their mixtures is additive, the density-temperature relationship can be used for rapid analysis of $NbCl_5$ and $TaCl_5$ in the absence of other impurities. The temperature can be determined within 0.2 degree, and density within 0.005 gm/cm^3 with 1% accuracy. The Berthelot equation will give greater accuracy:

$$1/\rho = \frac{RT}{MP}\left[1 + \left\{\frac{9T_{kp}(T^2 - 6T_{kp}^2)}{128 \cdot p_{kp} \cdot T^3}\right\} \cdot p\right]$$

Orig. art. has: 1 equation, 4 tables and 1 figure.

ASSOCIATION: None

SUBMITTED: 14Mar63 DATE ACQ: 05Jun64 ENCL: 01

SUB CODE: IC,GP NO REF SOV: 003 OTHER: 002

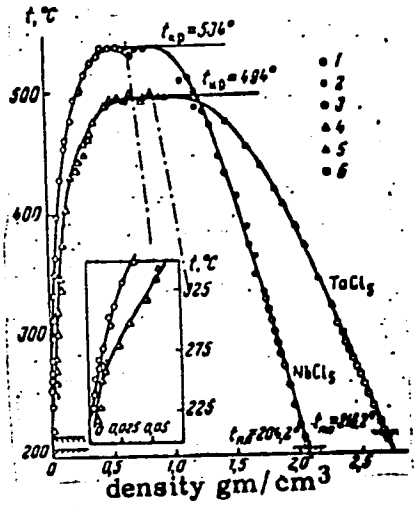
Card 2/3

ACCESSION NR: AP4036963

ENCLOSURE: 01

Fig. 1. Data for orthobaric density of $NbCl_5$ and $TaCl_5$.

1.--$NbCl_5$ (vapor); 2--$NbCl_5$ (liquid), data obtained in a small picnometer; 3--$NbCl_5$ (liquid), data obtained in large picnometer; 4--$TaCl_5$ (vapor); 5--$TaCl_5$ (liquid), data obtained in small picnometer; 6--$TaCl_5$ (liquid), data obtained in large picnometer.
t_{kp} = critical temperature
$t_{пл}$ = melting temperature



Card 3/3

L 17126-63 EWP(q)/EWT(m)/BDS AFFTC RDW/JD/AB

ACCESSION NR: AP3000905 S/0279/63/000/002/0079/0085

AUTHORS: Nisel'son, L. A.; Pustil'nik, A. I.; Soshnikova, L.A. (Moscow) 61 59

TITLE: Purifying selenium from tellurium by rectification 16

SOURCE: AN SSSR. Izv. otd. tekh. nauk. Metallurgiya i gornoye delo, no. 2, 1963, 79-85

TOPIC TAGS: rectification, purification, Se, Te, density, viscosity, surface tension

ABSTRACT: The authors made their experiment because the common technique of obtaining Se (by distillation) is ineffective in eliminating certain elements that have comparable volatility (especially Te, Sb, and S). Because of complications in construction if rectification were carried on in a vacuum and because such properties as viscosity and surface tension are thus altered deleteriously, it appeared best to rectify Se at ordinary atmospheric pressure. The setup is illustrated in Fig. 1 (see Enclosure 1). The internal diameter of the column is 30-32 mm. The sieve plate has 40 openings 0.8 mm in diameter, formed ultrasonically. The distance between plates is 30-32 mm, and 10 plates are used in the column. To prevent congelation of the Se, the head of the apparatus is equipped with an electrical

Card 1/3

L 17126-63
ACCESSION NR: AP3000905

2

heating element. The thermally insulated jacket of the column, with its electrical heater, is made of glass tubing with asbestos insulation, and the jacket has a transparent window for observation. The temperature was measured in tests with an accuracy of 0.5C by a Chromel-Alumel thermocouple and a semiautomatic R2/1 potentiometer. In testing the equipment, rectification of Se suffered from the difficulty of maintaining normal conditions, resulting from unequal (impulsive) boiling of Se and from the very narrow range of operating flow rates into the column. The degree of purification obtained in the experiments proved to be substantially less than computed values indicated they should be. The authors conclude that this is due partly to the problem of maintaining steady conditions and partly to imperfections in the design of the column head. They are convinced the recification method has great promise for Se. Orig. art. has: 4 figures and 6 tables.

ASSOCIATION: none

SUBMITTED: 06Aug62 DATE ACQ: 12Jun63 ENCL: 01

SUB CODE: ML NO REF SOV: 014 OTHER: 008

Card 2/3

L 18524-63 EPF(n)-2/EWP(q)/EWT(m)/BDS/ES(s)-2 AFFTC/ASD/SSD Pt-4/Pu-4
ACCESSION NR: AP3002389 WW/JD/JG S/0279/63/000/003/0110/0110

AUTHORS: Nisel'son, L. A.; Pustil'nik, A. I. (Moscow)

TITLE: Density and viscosity of liquid niobium and tantalum pentachlorides

SOURCE: AN SSSR. Izv. Otd. tekhnicheskikh nauk. Metallurgiya i gornoye delo, no. 3, 1963, 110

TOPIC TAGS: niobium pentachloride, tantalum pentachloride

ABSTRACT: Density (ρ) and viscosity (η) of liquid $NbCl_5$ and $TaCl_5$ have been determined at the temperature interval of 300-320C. Each substance contained no more than 0.02% of impurities. Densities were determined in sealed quartz picnometers, and temperatures were measured with both standard thermometers and thermocouples (temperature accuracy was ± 0.1C). The results were corrected for the thermal expansion of quartz and for the weights of vapors. Relative error in density was 5 x 10^{-2}%, in viscosity it was 0.2%. Viscosities were determined in a modified Martin viscosimeter. Data were processed by the method of least squares. It was established that:

$$\rho_{NbCl_5} = 2.0737 - 3.115 \cdot 10^{-3} \cdot \Delta t + 3.58 \cdot 10^{-6} \cdot \Delta t^2$$

$$\rho_{TaCl_5} = 2.6840 - 4.100 \cdot 10^{-3} \cdot \Delta t$$

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L 18524-63

ACCESSION NR: AP3002389

$$\eta_{NbCl_5} = 0.921 - 1.325 \cdot 10^{-3} \cdot \Delta t + 1.120 \cdot 10^{-4} \cdot \Delta t^2 - 4.30 \cdot 10^{-7} \cdot \Delta t^3$$

$$\eta_{TaCl_5} = 1.003 - 1.667 \cdot 10^{-3} \cdot \Delta t + 1.8 \cdot 10^{-4} \cdot \Delta t^2 - 8.455 \cdot 10^{-7} \cdot \Delta t^3$$

Orig. art. has: 4 formulas.

ASSOCIATION: none

SUBMITTED: 31Jan63 DATE ACQ: 12Jul63 ENCL: 00

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

Card 2/2

NISEL'SON, L.A. (Moskva); PUSTIL'NIK, A.I. (Moskva)

Density and viscosity of liquid niobium and tantalum pentachlorides. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.3:110 My-Je '63. (MIRA 16:7)

(Niobium chloride) (Tantalum chloride)

PUSTELNIK, Danuta; TANIEWSKI, Michal

Maleic acid anhydride in the synthesis of alkyd resins.
Polimery tworz wielk 8 no. 11: 420-423 N '63.

1. Instytut Farb i Lakierow, Gliwice.

CHERNYAYEV, V.N.; PUSTIL'NIK, A.I.

Phase equilibrium in solutions of silicon tetraiodide and antimony triiodide. Izv.vys.ucheb.zav.; tsvet.met. 2 no.6: 147-153 '59. (MIRA 13:4)

1. Krasnoyarskiy institut tsvetnykh metallov, problemnaya laboratoriya chistykh metallov, metallicheskikh soyedineniy i poluprovodnikovykh materialov.
(Vapor-liquid equilibrium) (Antimony iodide)
(Silicon iodide)

MYSHLYAYEV, A.M.; PUSTIL'NIK, I.G.; MOROZ, L.I.

Discussing the contents and structure of the school physics course. Fiz. v shkole 23 no.5:40-45 S-O '63. (MIRA 17:1)

1. Pedagogicheskiy institut, g. Karachayevsk (for Myshlyayev).
2. 36-ya srednaya shkola, g. Sverdlovsk (for Pustil'nik).
3. Institut vechernikh (smennykh) i zaochnykh shkol Akademii pedagogicheskikh nauk RSFSR, Leningrad (for Moroz).

PUSTIL'NIK, I.G., inzh.

Automatic device for turning on water screens in mines. Bezop. truda v prom. 5 no.9:27-28 S '61. (MIRA 14:10)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut, g. Sverdlovsk.

(Mine dusts--Safety measures)