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L 12264-63 EWT(1)/BDS AFFTC/ASD

S/271/63/000/004/005/045

50

AUTHOR: Berkman, R. Ya.

TITLE: A means for setting up measuring circuits on the basis of magnetic amplifier and magneto-modulation pick-ups

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemakhanika i vychislitel'naya tekhnika, no. 4, 1963, 12, abstract 4A71 (Geofiz. priborostr.; No. 10, Leningrad, Gostoptekhizdat, 1961; 50-53)

TEXT: The author examines a method for setting up a measuring circuit with magnetic transducers operating by measuring direct currents (or fields). The proposed, method, upon the excitation of high frequencies by the transducer, guarantees low-frequency AC voltage at the output of the circuit proportional to the measured quantity. To obtain AC low-frequency voltage, an auxiliary magnetization of the LF transducer is adopted. The circuit is marked by greater accuracy and reliability; it can be recommended for peak-type transducers. There are 5 illustrations and a bibliography of one item. V. S.

[Abstracter's note: Complete translation]

Card 1/1

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L 12261-63 BDS S/271/63/000/004/008/045

AUTHOR: Berkman, R. Ya.

46

TITLE: The detection of high even harmonics

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 4, 1963, 12-13, abstract 4A74 (Geofiz. priborostr.; no. 12, Leningrad, Gostoptekhizdat, 1962, 52-60)

TEXT: The author examines a phase detector on the equivalent of a nonlinear symmetrical resistance, operating with rectification of high even harmonics. He gives the computational relationships for the rectified current and a choice of optimal circuit elements; also the results of experimental tests. The data obtained may be used for planning circuits based on magnetic amplifiers (probes) with output on high even harmonics. There are 5 illustrations and a bibliography of 6 items. V. S.

[Abstracter's note: Complete translation]

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AFANASENKO, M.P. (L'vov); BERKMAN, R.Ya. (L'vov); MIKHAYLOVSKIY, V.N. [Mykhailovs'kyi, V.M.] (L'vov); SPEKTOR, Yu.I. (L'vov)

Special features of the operation of magnetic modulator transducers with output on higher even harmonics. Avtomatyka 8 no.3:9-15 '63. (MIRA 16:7)

(Transducers)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, R.Ya. (L'vov)

Effects of upper even harmonics in the excitation network of magnetic modulators. Avtom. i telem. 26 no.2:384-387 F '65. (MIRA 18:4)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, R. Ya.; BELOUS'KO, V.V.

Characteristics of the transformation of magnetic probes during the measurement of nonuniform magnetic fields. Defektoskopiia no. 5:61-67 '65 (MIRA 19:1)

1. Fiziko-mekhanicheskiy institut AN UkrSSR, L'vov.

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L 30357-66

ACC NR: AT6008317 SOURCE CODE: UR/0000/65/000/000/0086/0094

AUTHOR: Berkman, R. Ya. (L'vov); Fedotov, V. M. (L'vov)

ORG: none

17
B+1

TITLE: The analysis of the influence of the external magnetic field on the zero drift of magnetic modulators

SOURCE: AN UkrSSR. Elementy sistem otbora i peredachi informatsii (Elements of systems for selecting and transferring information). Kiev, Naukova dumka, 1965, 86-94

TOPIC TAGS: magnetic modulation, magnetic field interference, external magnetic field

ABSTRACT: The zero drift of magnetic modulators (MM) caused by external magnetic fields is one of the basic causes of errors in highly sensitive devices of this kind. The authors studied the most common MM with a second harmonic output and found that the asymmetry of semielements can be traced to the 1) longitudinal nonuniformity of the testing MM coil; 2) nonuniformity of the excitation coil; 3) nonuniformity in the magnetic properties of core materials; 4) nonuniformities in core cross sections; and 5) nonuniform distribution of parasitic capacitances of the coils and the specific resistivity of the core material. The present article, representing the first of a series of papers, offers a thorough analysis of the influence of the nonuniformities in the test coil on the zero drift in magnetic modulators. Newly derived relationships were first translated into appropriate graphs and then compared with the experimentally measured values of the total asymmetricity coefficient of four magnetic modulators

Card 1/2

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ACC NR: AT6008317

caused by all destabilizing factors. The comparison of the theoretical and experimental data indicates that the parasitic output MM signal caused by the external field because of the asymmetry of the test coil depends on the relationship between the geometric dimensions and on the mode of MM excitation. It increases with the increase in excitation, decrease in cross section, and increase in diameter of the MM core. Orig. art. has: 20 formulas, 4 figures, and 1 table.

SUB CODE: 09,20/ SUBM DATE: 06Nov65 / ORIG REF: 002

Card 2/2

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L 39636-66 EWT(1) IJP(c) GD-2

ACC NR: AP6002885 SOURCE CODE: UR/0286/65/000/024/0041/0042

INVENTOR: Fedotov, V. M.; Berkman, R. Ya.

ORG: none

TITLE: Device for measuring magnetic fields. Class 21, No. 176978

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 41-42

TOPIC TAGS: magnetic field, magnetic field measurement, ~~measurement, measuring instrument~~, magnetic amplifier, phase detector, physics laboratory instrument

TRANSLATION: A device for measuring magnetic fields, consisting of an annular iron probe and a magnetic amplifier, is characterized by the fact that the receiving windings of the iron probe are applied in the form of narrow loops over each of the annular cores and connected with the input winding of the magnetic amplifier by a phase detector. The input windings of the magnetic amplifier are drawn over the entire length of the cores and connected with the output winding of the magnetic amplifier by a supplementary phase detector. These characterisitcs were incorporated in the design in order to reduce the weight and size of the device as well as the power consumption. [EB]

Card 1/2 UDC: 621.317.42

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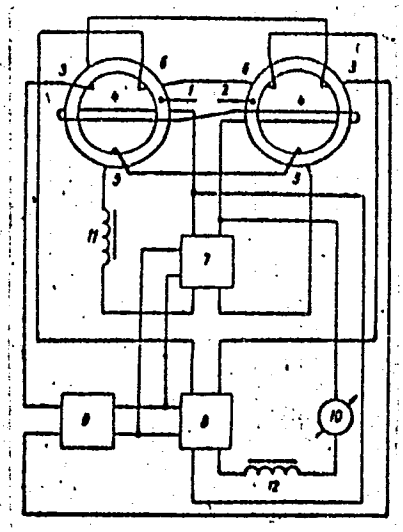
L 39636-66

ACC NR: AP6002885



1 and 2 - annular cores; 3 - excitation winding; 4 - winding of the iron probe; 5 - input winding of the magnetic amplifier; 6 - output winding of the magnetic amplifier; 7 and 8 - phase detectors; 9 - generator; 10 - recorder; 11 and 12 - filters.

SUB CODE: 20/ SUBM DATE: 21Nov64

Card 2/2

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, V.

Berkman, V. - "A case of an inflammatory-ascitic syndrome in parenchymatous hepatitis", Sbornik rabot Studench. nauch.-o-va Khar'k. med. in-ta, No. 8, 1949, p. 110-12.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).

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PROCESSES AND PROPERTIES INDEX

Ca

29

Production of syntans as a practical problem. YA. BERKMAN. *Vestnik* (Leather Ind. and Trade) 1938, No. 2/3, 88-90.— B. advocates the extensive production and use in Russian tanneries of synthetic tans. Because of peculiar conditions of Russian economic life the naphthalene and anthracene types of syntans are preferable, especially if prepd. without formaldehyde. B. claims that leather produced with synthetic tans alone or in combination with vegetable tans is of superior quality to that produced by vegetable tans alone.

B. MONSAROFF

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Synthetic tanning material. Ya. P. Berkman and D. V. Tolkachev. Russ 26,541, Oct. 31, 1931. A tanning material is prepd. from the higher fractions of coal tar by sulfonation and treatment of the semi-finished product with oxidizing agents. The compn. in the process of prepn. before the oxidation with $K_2Cr_2O_7$, Cl_2 or other oxidizing agents is mixed with an aq. soln. of glucose or formalin or other carbohydrates or aldehydes and then neutralized with NaOH.

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Bleaching synthetic tannin (obtaining a product of lighter color) by preliminary treatment of the raw materials from the coal. Ya. Berkman and A. Savitzkii. *Anilinokrasochnaya Prom.* 1931, No. 4-5, 11-21; *Chem. Zentr.* 1932, 1, 1613.—By preliminary polymerization of the heavy oil and anthracene oil with H_2SO_4 a lighter synthetic tannin is obtained. This treatment results in a loss of 20% heavy oil and 25% anthracene and an increased consumption of 20% of H_2SO_4. M. G. Moore

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

29

A proposed standard for the synthetic tanning material Bestan AS. Ya. P. Berkman. *Anilinokrasochnaya Prom.* 2, No. 4, 31-6(1932).—An arbitrary standard of quality of Bestan AS is maintained by chem. analysis and detns. of tanning power with hide powder, p_H, and the speed of tanning penetration of unhaired hide. C. R.

COMMON ELEMENTS

OPEN

MATERIALS INDEX

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29

CA

The influence of the volume of the precipitate on the accuracy of the p_H determinations in tanning extracts. Ya. P. Beykman. *Investiya Tsentral. Nauch.-Issledovatel. Inst. Koshevennoi Prom.* 1933, No. 1, 9-10.—In all indirect methods used in the detn. of p_H (by the difference of the dry residues before and after their sepn.) there is always an inaccuracy caused by not taking into account the vol. occupied by the residue. This inaccuracy increases rapidly with increased concn. of the soln. and it can be calcd. by the introduction of the following factor: $d/(d - a)$, where d = sp. gr. of the insol. and a = the dry residue of sol. substances in 1 cc. The deviations observed for oak ext. increase from 5 to 27% for analytical concns. up to 20°Bé. The inaccuracy is still higher when the gravimetric method is used and the correction factor to be used in this case is $d/(d - a)$, where d = the sp. gr. of the soln. after the removal of the ppt. and a = the dry residue of sol. substances in 1 cc. The exptl. procedure is described. A. A. Boehtlingk

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Artificial tanning agents. Ya. P. Berkman. Trans. VI Mendeleev Congr. Theoret. Applied Chem. 1933 2, Pt. 1, 895-903(1935).—A historical outline, classification and chem. characteristics are given. E. E. S.

COMMON ELEMENTS

COMMON VARIABLES INDEX

OPEN

MATERIALS INDEX

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

Use of sulfur monochloride for the condensation reaction in the synthesis of tanning agents of the sulfonic acid type. Ya. P. Berkman and A. Ya. Savitzkii. *Trans. VI Mendeliev Congr. Theoret. Applied Chem.* 1932 2, Pt. 1, 912-19(1935).—The product obtained by sulfonating crude anthracene with H_2SO_4 was treated with 10-20% of S_2Cl_2 at 80-90°, HCl was removed and the product neutralized with concd. NaOH. The rate of adsorption by hide powder of the tanning agent thus obtained is higher than that of uncondensed aromatic sulfonic acids. E. E. S.

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29

Determining the total sulfur in leather by the combustion method in a calorimetric bomb. Ya. P. Berkman and T. S. Basal-Kudish. *Ovladenie Tekhnikoi: Kozhobuznoe Proizvodstvo* 1932, No. 5, 38-9.—The following procedure is recommended for detg. total S in leather in the absence of trivalent metals. (1) The leather is broken up into pieces of 1 cu. m. of which about 1 g. is used. It is compressed in the usual manner and the briquet is weighed and placed in a Pt or SiO_2 crucible in a bomb charged with 10 cc. of a 10% soln. of alkali. The O_2 pressure is brought up to 20-25 atm., the sample burned in the usual manner, the bomb placed in water and the gas released with care. The contents of the bomb are transferred into a beaker, the bomb is rinsed and the soln. added to that in the beaker. The caustic soln. is oxidized with Br water, heated to boiling, acidified with HCl, boiled for 30 min. to remove the Br and filtered. SO_3 is detd. in the filtrate in the usual manner. It was found that concordant results are obtained by this method and that they are as a rule higher than those obtained in the Balland-Maljean method and that the deviations of the results obtained by the above methods have no relation to the SO_3 content. The analysis of total S in a leather contg. Cr should be carried out as follows: The preliminary prepn. (1) of the sample is as usual but the pressure in the bomb is brought up only to 8 atm. (2) The soln. of alkali and the washing water are handled in the same way as before. (3) The ash is fused with the oxidizing mixt., the melt dissolved in H_2O and S is either directly pptd. as $BaSO_4$ or in an acidic medium with a correction for $BaCrO_4$ or it may be first reduced to remove Cr. The total S is that contained in (2) and (3). Conclusion: The total S in leather can accurately and rapidly be detd. by combustion in a calorimetric bomb. The analytical procedure is described. A. A. B.

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

76

Drying varnishes. P. T. Novak and Ya. P. Berkman. Russ. 31,080, Sept. 30, 1933. Drying varnishes are prepd. from cyclic compds. such as anthracene, carbazole, or mixts. contg. these compds., which are treated with sulfur chloride either directly or in a solvent.

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

B-II-10

BC

Chemical-technological characteristics of the tanning material "Boston AS." V. P. Bierman, V. Barun, and D. Tolkachev (Kosh.-Obuvn. Prom. U.S.S.R., 1934, 13, 270—275).—"Boston AS" is prepared by sulphonation of low-grade anthracene and 10% crude $C_{10}H_8$ with 90—99% H_2SO_4 at 120°. The product is condensed with 8% of CH_2O, partly neutralized with Na_2CO_3, and finally treated with conc. $Na_2Cr_2O_7$. Analysis gave C 35·2, H 2·2, N 0·7, S 17·0, O 25·5, Na 13·8, and Cr 2·5%. The Cr compounds of the aromatic and heterocyclic sulphonic acids are the active tanning ingredients. Ch. Abs. (e)

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CA

PROCESSES AND PROPERTIES INDEX

7

Determination of oil in crude anthracene. Ya. P. Berkman and I. G. Gurzhi. *Coke & Chem.* (U.S.S.R.) 4, No. 7, 66-8(1934); *Chimie & industrie* 33, 604.—Weigh 50 g. of powd. crude anthracene into a 200-cc. glass-stoppered Erlenmeyer flask, add 25 cc. of gasoline, shake carefully for 10-15 min., filter under reduced pressure through a Büchner filter, return the residue to the flask and repeat the operations, and dry the residue to const. wt. at 40-50° on a dry tared filter; transfer the combined filtrates to a 100-cc. Würtz flask, distil on an oil bath at a temp. not exceeding 180-200°, transfer the residual oil to a small beaker, let stand several hrs., sep. the crystals which form, wash with 5 cc. of gasoline, dry to const. wt. at 40-50° and weigh to obtain the correction for the soly. of the solid fraction (phenanthrene). Det. moisture on a sep. portion of sample. The oil in the crude anthracene is given by $2[50 - (a + b)] + 0.8 - c$, in which a is the residue from gasoline washing, b the soly. correction, c the H_2O and 0.8 a correction for resinification of the oil. A. Papineau-Couture

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21

CA

Chemical composition of Donbas crude anthracenes. Ya. P. Berkman and I.G. Gurshi. Coke and chem (U.S.S.R.) 4, No.11 69-73(1934) The av. compn. of several grades of crude anthracene is: H_2O 1.6 -12.6, ash content less than 1, anthracene 10-15, carbazole 16-19, bases 2% and S less than 1%. Stored crude anthracene contains more H_2O and mineral matter and less oil, and accordingly different proportions of org. substances, than the fresh stocks of crude anthracene.

Chas. Blanc

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PROCESSES AND PROPERTIES INDEX

Ca

29

The active acidity of hides in individual stages of chrome tanning. Ya. P. Berkman and Z. G. Shilyanskii. *Kozarno-Obuvnoe Prom.* 14, 138-42(1935).—For complete control of the mfg. process it is recommended to use the Sb electrode, which permits detn. of the necessary amount of active acidity in all stages of the semifinished product. A direct p_H detn. on the fiber permits checking of deviations, which is impossible by means of any other methods. These detns. are of a particular value in the pickling, tanning and neutralizing operations. A detailed description of the method as applied in production scale operations is furnished.

A. A. Boehtlingk

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Ca

Synthetic tanning substances. Ya. P. Berkman. *Sovet Sinteti. Dubileĭ, Sbornik Rabot Tsentrosoyuz Kozhevenno-Khim. Koshevennoĭ Prom. Sovetov, Khozhstvo Pilial Vsesoyuz. Nauch.-Issledovatel. Inst.* 1935, 7-22.—Soviet synthetic tanning substances (anthracene N, K and OK; "bestan" A, AS, AS-2 and AS-3; and sulfonated anthracene) and the methods of prepg. them are reviewed. The "bestan AS" tanning material. Ya. P. Berkman. *Ibid.* 20-50.—Crude anthracene (90%) (obtained from a coal-tar fraction b. 270-360°, and contg. phenanthrene 20-5, carbazole 10-17, anthracene 8-12, bases 1.5-2.5 and phenols 0.5-2.0%) and 10% of crude naphthalene obtained from the middle fraction of the same tar are treated with an excess of H_2SO_4 at 120°, under const. agitation until the product completely dissolves in water. The product is condensed with 3% formalin in the presence of 15% water at 70-80° during 2 hrs. the condensate is partially neutralized with Na_2CO_3 until the acidity of the soln. is 4 cc. of 0.5 *N* KOH per g. of the sulfo compd.; and it is finally oxidized with $Na_2Cr_2O_7$. "Bestan AS" thus obtained is easily sol. in water, and when dehydrated at 100-110° retains its solv. The "bestan" soln. is clear and almost black in high concn. or greenish brown on dilu., is stable at high concn. and sometimes forms a flaky ppt. or becomes opalescent on dilu.; it has colloidal properties. The p_H of the soln. is of the order of 2, and it has a constant buffer index, which permits tanning at a comparatively high p_H. Investigation of the "bestan" tanning process for preparing syntano-vegetable-tanned soft leather. Ya. P. Berkman and V. N. Babun. *Ibid.* 57-105.—The soaking, liming, unhairing, deliming, vatting and pickling of the hides are described in detail. The tanning is carried out with a 70% soln. of "bestan AC" of 21°Bé. (on the wt. of the raw hide), at a liquid factor of 1.5-1.8 and a temp. of 18-20°. The tanning material is introduced in 3 portions. The spent soln. is used again after addn. of 50% of "bestan" soln. The final soln. should have a p_H of 2.5-3.5. The goods are washed with 3 batches of water at a liquid factor = 3. The final tanning is effected during 15 hrs. with a spent vegetable soln. contg. 20-5 g. tannins per l. at a liquid factor of 2 and p_H 4.5-5. The leather is dyed with nigrosine, pressed in hydraulic presses, and fat-liquored in a drum blown with air at 42°. Comparative investigation of the influence of preliminary and consecutive tanning with "bestan AS" in combination with vegetable tanides on the properties of leather. Ya. P. Berkman and V. N. Babun. *Ibid.* 106-19.—A normally active acidity during the tanning process (with "bestan AS") produces leather of satisfactory durability and good stability in respect to various treatments. The decrease of the initial strength is not considerable and there is no tendency to decrease further. Preliminary tanning with "bestan" lowers but slightly the strength of

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the material. The use of "bestan" in the final stage of tanning causes a decrease of the quality of color and promotes formation of films of mineral salts, which corresponds to increased ash content of the leather. Vegetable solns. used in the final stage improve the strength of the leather better than "bestan" (used in this stage). Leather treated by different tanning methods has the same thickness. As a result of the investigation, it is recommended to use "bestan" for preliminary tanning of the leather. **Dry final tanning in the preparation of syntano-vegetable-tanned leather.** Ya. P. Berkman and R. M. Shchuchinskii. *Ibid.* 120-30.—The tanning factor increases from 25 to 32% when a dry method of final tanning is used, and the consumption of vegetable tannins decreases by 50%. The leather obtained in the treatment with an oak ext. is very soft and elastic and has a smooth and soft grain side. The mechanical properties of the product are identical with those of the product of syntano-vegetable tanning. **Preparation of uppers from sheep skins by tanning with "bestan AS."** D. N. Feigin and I. A. Tafel'shtein. *Ibid.* 131-6.—Prepn. of the skins for tanning is described in detail. The tanning is carried out with 40% H_2O at 20° and a "bestan AC" 20° Bé. tanning soln. (20-35%), which is added during the operation in two batches with a 30-min. interval. The p_H of the soln. is originally 2.3-3.5. The penetration is checked after 4-6 hrs. and the goods are spread out for 24 hrs. The p_H of the spent soln. is 3.5-4.8. The gloss compd. contains linseed oil 500 g., nigrosine 2.0 kg., Anile Dark Blue 500 g., gelatin 200 g., blood 17 l. in a vol. of 100 l. **Hygroscopic properties of syntan-tanned leather.** V. N. Ilabun. *Ibid.* 137-51. Syntan-tanned leather is less hygroscopic than chrome-tanned and more than the vegetable-tanned. The hygroscopic level depends upon the variations of the hydrophilic properties of the collagen and is different for leathers passed through different tanning processes. The hygroscopic properties of the leather are not connected with the capillary phenomenon, or with changes of its inner structure. The usual washing of the leather lowers its hygroscopicity and its residual moisture observed in the storage in dry air. The hygroscopicity of leather prepd. from unsoftened raw material is higher than that of leather prepd. from softened raw material. The lower hygroscopicity of the syntan-tanned leather is caused by pickling. **Influence of the ratio of chrome and the organic substance on leather tanned with "bestan AS."** Ya. P. Berkman and V. B. Shklyar. *Ibid.* 152-67.—By varying the amts. of Cr introduced into synthetic "bestan" tanning substances, the sulfonic acids, which are the main ingredients of these substances, can be completely or partially transformed into Cr salts. The total acidity of the tanning substances, i. e., the reserve of hydrolyzed acid, varies proportionately with the Cr content. The active acidity of solns. with equal d. decreases with decrease of the Cr content, because of (a) lowering of the Cr concn. and (b) increase of the relative amts. of the Na salt of sulfonic acids and Na_2SO_4. These changes cause a decrease of the buffer index of the tanning soln. The acidity of the tanning soln. is lower the lower the ratio of Cr to org. substances. Changes of the buffer index cause a decrease in the amt. of adsorbed and irreversibly bound substances, lower the tanning factor of the leather for the same consumption of tanning substance, increase the Cr consumption from the soln. and increase the av. level of the alky. of the Cr complexes combined with leather. It is possible, in practice, to lower the Cr content in the "bestan AS" by 25-30% in tanning cow hides. An increase of the Cr content in "bestan AS" does not improve the physical properties of the leather, because an excess of the Cr salts of sulfonic acids combines unstably with the leather as a result of the relatively high active acidity of the dil. soln.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

Ca

29

and its change during the tanning process. The Cr content of the leather is therefore only slightly higher than that of leathers tanned with normal "bestan." It is possible to increase adsorption of Cr by increasing the basicity of the Cr salts of sulfonic acids. By this means the tanning substance with a high Cr content would yield a leather with a CrO_3 content approaching that of the usual Cr tanning, but with an increased fullness, which is characteristic of "bestan." **Influence of the character of the coal-tar products as a raw material on the chemical properties of leather tanned with "bestan"-type substances.** Ya. P. Berkman and V. B. Shklyar. *Ibid.* 168-83.—Phenols have no advantages over hydrocarbons (naphthalene) or technical mixts. contg. hydrocarbons and heterocyclic compds. (crude anthracene). Independently of the org. substances used as a base in the tanning substances, the "bestan"-tanned leather has about the same physical properties. The analytical and mechanical indexes of the leather also are similar. The influence of the original raw material is seen mainly in the color of the leather, which is white when naphthalene is used, light yellow with cresol, light brownish with heavy oil, brown and dark brownish with a greenish tint with anthracene oil and crude anthracene. A higher elasticity of the grain side of the leather was observed when cresol, naphthalene and heavy-oil derivs. were used for tanning substances. The initial organic material affects the adsorption and the irreversibly combined tan. **Preparing hard leather by tanning with "syntan anthracene K."** Ya. P. Berkman and V. N. Babun. *Ibid.* 184-228. A final vegetable tanning of the leather treated with "anthracene K" is essential to produce a finished leather with high hygrothermal stability. Various tanning methods are described and the results are tabulated. **Solvent action of the synthetic tanning substances of the type of sulfoaromatic acids on oak extract.** Ya. P. Berkman and V. N. Babun. *Ibid.* 229-49.—Solvent action is detd. by protection of the tannin micelles as a result of adsorption of sulfonic acids and the lyophilic change; peptization of the particles of the vegetable tannin and increases of dispersion of the system, chem. action of sulfonic acids on the tannin, change in the active acidity of the medium, and effect of electrolytes. On mixing an oak ext. with syntan, the amts. of adsorbed and irreversibly combined substances increase, as does also the active acidity. Introduction of 30-40% (by vol.) of acid syntan into the soln. of oak ext. retards the appearance of color and increases the tanning factor. **Use of "anthracene N" in combination with sulfite for dissolving oak extracts.** Ya. P. Berkman and V. N. Babun. *Ibid.* 250-6.—Oak ext. can be dissolved with a syntan with the least change in its technological properties by a combined

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treatment of the ext. with sulfite and syntan (a max. of 2% of sulfite and 10% (20°Bé.) syntan). With complete soln. of the ext. the p_H is maintained at a normal level and the velocity of the penetration of the color is greater than that of sulfited ext. The method is described in detail. **Analytical control of the quality of "bestan AS."** Va. P. Berkman. *Ibid.* 257-64.—The moisture content detd. in the usual manner should amount to 30-35%, and the ash content should be 40-7%. The Cr_2O_3 content detd. by dry oxidation in the usual manner or by calcination in the soln. (cf. 2nd abstr. below) should be 3.4-3.8%. The total acidity by titration with 0.5 *N* alkali should be 0.2-0.5 cc. of 0.5 *N* soln. The p_H detd. by the quinhydrone method should be 2.0-2.5 for a soln. of 20°Bé. **Substances adsorbed by the hide powder,** detd. by dilg. 10 cc. of 20°Bé. soln. to 100 cc. and analyzing an aliquot for the total dry residue and another by detanning with hide powder, should be 38-42% (for "bestan AS). Penetration through the leather (3.5-4.0 mm. thick) of a 20°Bé. soln. (liquid factor 1.5) should take place in 15-18 hrs. **Investigation of the active acidity and the buffer index in solutions of synthetic tanning substances.** Va. P. Berkman and I. A. Tafel'shtein. *Ibid.* 265-81.—Sulfonic acids of tricyclic hydrocarbons (from crude anthracene) have a higher buffer index at the curve section approaching the neutral point than those of mono- or dicyclic hydrocarbons. Sulfates considerably increase the p_H of the soln. of synthetic tanning substances without changing the general character of the curve, while chlorides lower insignificantly the p_H of these solns. The presence of salts with a common anion increases the p_H and the buffer index of the curve in the vertical section. Condensation somewhat increases the p_H. The titration curve of "bestan" is characterized by a relatively const. buffer index along the entire curve, which has three main sections of p_H of 2.0-4.0, 4.0-6.0 and 6.0, the middle section having the greatest buffer index. During the reaction of synthetic tanning substances with hide substance, the acid is taken up from the soln. and is combined with the hide substance; this causes a decrease of the total acid and an increase of the p_H of the soln. **Determination of chromium in the presence of aromatic sulfonic acids by means of oxidation in solution.** Va. P. Berkman and R. S. Gol'dfarb. *Ibid.* 282-90.—An aliquot (10 cc.) of dil. "bestan" soln. (20 cc. of 20°Bé. dild. to 100 cc.) is dild. with 10 cc. of a 10% NaOH and 30 cc. of water. The soln. is treated while boiling with a satd. soln. of $KMnO_4$ to pink color, 3-5 drops of alc. is added, to complete reduction of excess $KMnO_4$. The soln. is transferred to a 250 cc. volumetric flask, dild. to the mark, agitated, and filtered; the first 30 cc. is discarded. A portion of the filtrate (100 cc.) is dild. to 250 cc., acidified with 10 cc. concd. HCl and titrated iodometrically. The results obtained by this method agree with those obtained by the fusion method. **Determination of the total sulfur in leather by the combustion method in the calorimetric bomb.** Va. P. Berkman and T. S. Baral-Kudish. *Ibid.* 291-303.—The sample (1-1.5 g.) is burned in the presence of 10 cc. of 10% alkali in an O atm. (20-5 atm. pressure) in a calorimetric bomb. After cooling, rinsing of the bomb with water and removal of the gases formed, the contents of the bomb are transferred to a beaker, oxidized with Br water, boiled, acidified with HCl, boiled again to remove Br, and filtered. SO_4 ion is detd. in the filtrate by the usual method. Cr is present in the leather after pptn. of S and Cr with $BaCl_2$, the ppt. is dried to const. wt., the paper filter is burned and the ppt. is fused with Na_2CO_3 and treated with hot water. Cr is detd. in the usual volumetric manner. **Literature of synthetic tanning substances.** I. A. Tafel'shtein. *Ibid.* 338-49.—Two hundred thirty-five references covering 1913-1934 are tabulated.

A. A. Podgorny

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

B-II-1

BC

Production of concentrated anthracene by sulphonating crude anthracene in an indifferent solvent, and utilizing the sulphonated product for synthetic tanning agents. J. F. Berkman and D. V. Tolkatschev (Trans. VI Mendeleev Congr., 1934, 2, Pt. 1, 963—972).—Material containing 10—15% of anthracene (I) and 15—25% of carbazole is treated with conc. H_2SO_4 in kerosene for 2½ hr. at 90—100° to yield a conc. (80%) (I), a sulphonation product which can be incorporated with crude (I) and $C_{14}H_{10}$ to furnish a tanning agent, and crude phenanthrene. Ch. Abs. (c)

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

29

CA

Tanning of small leather pieces with "Naphthalene K" and a preliminary chrome tanning. Ya. P. Berkman and V. N. Baban. *Kozhevno-Obuvnaya Prom. S. S. S. R.* 19, No. 11, 40-1(1939).—The method is described in detail and formulas for white and colored leather are given.
A. A. Podgorny

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

2ND AND 4TH ORDERS

2ND LETTER

AUTHOR INDEX

1ST AND 3RD LETTER

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

The conception of "volume yield" and its use in judging the degree of tannage of the leather. Ya. P. Berkman. *Kozhevenno-Obuvnaya Prom.* 16, No. 1, 37-9(1937); *Chem. Zentr.* 1939, I, 574. The apparent vol. of the leather depends upon the amount F, the amount of filler consumed by the leather during the tanning and upon the vol. of empty space remaining in the leather after the drying. These two values are independent of one another. The sp. gr. decreases with the increase of F, and accordingly there is an increase of the apparent vol. and the degree of tannage. The "volume yield" = 10,000 dk, where d = sp. gr. of the leather, and k = the hide substance in percentage. A. A. B.

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

21

Consumption of tannins in syntan-vegetable and in purely vegetable tanning of inner sole. Ya. P. Berkman, V. N. Babun, R. S. Gol'dfarb, I. E. Valsberg and S. V. Gerasev. *Kozhevenno-Obuvnaya Prom.* 16, No. 5, 34-7 (1937).—The amts. of tannins used in syntan-vegetable tanning are lower than in vegetable tanning by 18.2% for hides and by 13-14% for leather. Leather obtained by the 2 methods is of the same quality. A. A. Podgorny

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CW

34

Synthetic tanning substances. Ya. P. Berkman and D. V. Tolkachev. Russ. 54,203, Nov. 30, 1938. Phenol-aldehyde resins are sulfonated, treated with more phenol-aldehyde resin, heated with H_2O, and the sol products sepd. from the reaction mass.

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

PROCESSES AND PROPERTIES INDEX

Synthetic tanning substances. Ya. P. Berkman and I. G. Gurdzhi. *Org. Chem. Ind.* (U. S. S. R.) 5, 251-5 (1938).—*Tannigen LL* (I. G.), d. 1.2, was freed from the solvent (dil. AcOH) and the residue was examd. by analysis and the process of degradation. It is *NH_4 bis(1,2-dichlorobenzene-4-sulfonyl-4-aminotoluene-2-sulfonyl) benzidine-3,3'-disulfonate.* It was prepd. when the condensation product of Ca benzidine-3,3'-disulfonate with 2 mols. (20% excess) 2,4-$ClO_2S(O_2N)C_6H_3Me$ was reduced in HCl with Fe to bis(4-aminotoluene-2-sulfonyl)-benzidinedisulfonic acid and this was condensed with 2 mols. *p*-$Cl_2C_6H_3SO_2Cl$ and the product was converted into the NH_4 salt. It is a glass-like, transparent mass, changing on moderate heating to a viscous red-orange liquid. In its tanning properties it is identical with the com. Tannigan LL.

Chas. Blanc

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES

1A

27

Further development of the production of synthetic tannins. Ya. P. Berkman. *Kozhevenno-Obuvnaya Prom.* **1938**, No. 7, 26-7; *Khim. Referat. Zhur.* **2**, No. 2, 129-30 (1939); cf. *C. A.* **33**, 6640[8], 6641[8].—A complete assortment of synthetic tannins of the light type can be obtained only by the use of phenols. Phenols in combination with hydrocarbons are especially valuable. The sulfite cellulose exts. can be used as starting raw materials for the heavy synthetic tannins. The tannins obtained from the products of condensation of the polyphenols with aldehydes are very similar to the plant tannins, but their high cost hinders their development as synthetic tannins of the heavy type. W. R. Henn

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CA

15

Treating seeds. Ya. P. Berkman, B. A. Voloshinov and I. G. Gurdzhi. Russ. 55,840, Oct. 31, 1939. The seeds are treated with Mg, Fe or Zn salts of sulfonated crude anthracene, anthracene oil or heavy oil.

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

7

Volumetric determination of fluorine by the Greeff method. Ya. P. Berkman and S. Ya. Bystritskaya. *Zavodskaya Lab.* 8, 725-6(1939).—In detg. F by the Greeff method (formation of Na_3FeF_6) (*C. A.* 7, 3939) the optimum $FeCl_3$ concn. was found to be 0.4 *N*. The soln. should be neutralized exactly. In the presence of 1-2% sulfate the detns. are not affected, but higher sulfate concns. cause lower values.

B. Z. Kanich

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PROCESSES AND PROPERTIES INDEX

The synthesis of tanning substances from naphthalene sulfonic acids and bis-*p*-hydroxyphenyl sulfone. Va. P. Berkman and I. G. Gurdzhi. *J. Applied Chem. U.S.S.R.* 12, 151-6 (in French, 450) (1939); cf. C. A. 32, 8184. Bis-*p*-hydroxyphenyl sulfone (I) was heated with naphthalenesulfonic acid and CH_2O at 120° for 2 to 15 hrs. The products were treated with NaOH to decrease the acidity to 7 cc./g. of 0.5 N_2 and were dild. to 20°Bé. The tanning substances thus prepd. penetrated into the hides more slowly than did naphthalene or phenol tanning substances, but produced a much softer leather. The tanning substance contg. 20% of I (based on the sulfonic acid) produced pure white leather; higher amts. of I gave a red color which increased with the increase of I content. The color stability of the leather in the presence of light was higher than of that tanned by the usual phenol tanning substances but it was still insufficient; under the action of sunlight the leather became yellow. A. A. Podgorny

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

29

Synthetic tanin. Ya. P. Berkman and D. V. Tolkachev. Russ. 57,349, June 30, 1940. Phenol-formaldehyde resins are condensed with a product of sulfonation of crude anthracene or other aromatic compds. of coal tar.

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

Ca

29

Synthetic tanning material. Va. P. Berkman and D. V. Tolkachev. Russ. 50,[illegible], March 31, 1941. Phenol formaldehyde condensation products are sulfonated until completely sol., and then treated with formaldehyde.

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PROCESSES AND PROPERTIES INDEX

29

Synthetic tanning agents. Ya. P. Berkman. U.S.S.R. 66,865, Aug. 31, 1946. Addn. to U.S.S.R. 59,308 (*C.A.* 39, 1073[9]). As tanning agents are used sulfonated condensation products of CH_2O with phenol homologs or tech. mixts. of phenols, b. up to 250°. M. Hosch

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29

Synthetic tanning agents. Ya. P. Berkman and D. V. Tolkachev. U.S.S.R. 66,866, Aug. 31, 1946. Condensation products of phenol or its homologs with aldehydes are sulfonated by means of 0.4–0.8 mols. of $H_2SO_4.H_2O$ per 2 mols. of phenol. M. Hosch

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

PROCESSES AND PROPERTIES INDEX

CA

29

Synthetic tanning agents. Ya. P. Berkman. U.S.S.R. 66,909, Aug. 31, 1946. Addn. to U.S.S.R. 57,319 (C.A. 36, 2739). Sulfonated aromatic derivs. are condensed with condensation products of CH_2O with homologs of phenol, crude tech. mixts. of phenols, or individual fractions of such mixts.

M. Hosch

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CA

29

Synthetic tanning agents. Ya. P. Berkman. U.S.S.R. 66,863, May 31, 1947. Condensation products of higher phenols with aldehydes or ketones are sulfonated and the sulfonation products again condensed with CH_2O. This second condensation is carried out in a neutral or alk. medium by heating under a reflux condenser at 100–120° for 1-2 hrs. After that, the product is acidified as desired. This tanning agent is used for obtaining leather of light or natural color. Addn. to U.S.S.R. 50,368 (*C.A.* 39, 1073[3]). Cf. *C.A.* 41, 4070ab. M. Hosch

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PROCESSES AND PROPERTIES INDEX

CA

An investigation of synthetic tanning materials. Ya. P. Beckman (Lvov Polytechnic Inst., Lvov, U.S.S.R.). *J. Am. Leather Chemists' Assoc.* 42, 409–22(1947); cf. *C.A.* 33, 6640[9].—Conclusions as to the chem. nature and probable method of prepn. of the German materials, *Tanigans Extra A* (I) and *B* (II) were drawn from analyses and potentiometric titration curves. I is probably a dispersion of phenol-aldehyde resin in purified sulfite-cellulose. II is a condensed phenolsulfonic acid contg. 1 sulfonic group to approx. 3 phenol mols. It is probably prepd. by condensing 0.5–0.7 mol. HCHO with 1 mol. phenol in H_2SO_4 soln., sulfonating the resin, neutralizing with ammonia, and acidifying with AcOH. Tanning expts. were carried out with I and II and with similar products prepd. by B. The "filling" and "forming" properties were evaluated by detn. of the degree of tannage and vol. yield (*C.A.* 33, 6641[9]), resp. Both I and II possess properties warranting their designation as replacements for vegetable exts. "Filling" ability is superior in I, "forming" ability in II. I and II are therefore most suitable for tanning heavy and light leathers, resp.

J. H. Highberger

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BERKMAN, Ya. P.
25376

Royki Obshchekhimiecheskoy Podogotovki V Khimicheskikh Vuzakh.
Vestnik Vyssh. Vestnik Vyssh. Shkoly, 1948, No. 6, s. 9-12.
Vartanyan, A. T. --sm. No. 25394

SO: LETOPIS NO. 30, 1948

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BERKMAN, Ya.P.; VIZGERT, R.V.

Esters of 4,4'-dioxydiphenylsulfone. Part 1. Synthesis of esters of 4,4'-dioxydiphenylsulfone and aliphatic acids. Ukr.khim.zhur.17 no.2:264-269 '51. (MLRA 9:9)

1.L'vovskiy politekhnicheskiy institut.
(Acids, Fatty) (Sulfone)

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BERKMAN, Ya.P.; VIZGERT, R.V.

Esters of 4,4'-dioxydiphenylsulfone. Part 3. Synthesis of esters of 4,4'-dioxydiphenylsulfone and aromatic sulfo acids. Ukr.khim.zhur. 18 no.2:179-183 '52. (MLRA 6:9)

1. L'vovskiy politekhnicheskiy institut. (Esters) (Sulfones)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya. P.

Esters of 4,4'-dihydroxydiphenyl sulfone. IV. Synthesis of incomplete esters of 4,4'-dihydroxydiphenyl sulfone with aliphatic and aromatic carboxylic acids and with aromatic sulfonic acids. Ya. P. Berkman and E. V. Vitkevi (Lvov Polytech. Inst.). *Ukrain. Khim. Zhur.* 18, 31[illegible] (1952) (in Russian); cf. *C.A.* 48, 13550c.—To 2.5 g. *4,4'-dihydroxydiphenyl sulfone* (I) in 4 ml. AcOH was added 1 g. BzCl followed by 5 ml. pyridine added dropwise with ice-cooling, after which the mixture was kept at 60° until BzCl had reacted; treatment with dil. H_2SO_4 gave a slowly crystallizing oil, which was extd. with C_6H_6 and the evapd. extr. gave mono-Bz I, m. 149-52° (crude), m. 151-3°. Reaction of I with 0.66 mole AcCl in the presence of pyridine gave an oil which appeared to be partly the mono-Ac deriv., which crystallized after considerable time and was identical with the above. Reaction of 5 g. I with 1.88 g. BzCl and 15 ml. pyridine gave 0.9 g. *di-Bz* I, m. 245-7°, and 0.6 g. *mono-Bz* I, m. 198-200°, which were sepd. by extn. with EtOH (di-Bz deriv. is insol.). Reaction of I with BzCl in the presence of 10% NaOH gave 37% di-Bz deriv. and 20% mono-Bz deriv. Reaction of 2.5 g. I with 1.18 g. $PhSO_2Cl$ in 10% NaOH gave 42% *p-$PhSO_2C_6H_4SO_2C_6H_4OH$-p* (II), m. 106-8° (from EtOH); similarly was prepd. 31% *p-Cl-$C_6H_4SO_2C_6H_4SO_2C_6H_4OH$-p*, m. 135-7° (from AmOH), 28% corresponding *p-Br analog*, m. 150-2° (from C_6H_6), and 25% corresponding *m-O_2N analog*, m. 158-60° (from EtOH). Monobenzoyl I and $PhSO_2Cl$ in 5% NaOH gave a low yield of *p-$BzOC_6H_4SO_2C_6H_4O_2SPh$-p*, m. 144-6°; the same was obtained from II and BzCl. G. M. Kosolapoff

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Berkman, Ya. D.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, YA. P.

The influence of the alcohol constituent on the rate of alkaline hydrolysis of esters. Ya. P. Berkman and R. V. Vizgert (Polytech. Inst., Lvov). *Zhur.* 20, 261-71(1954)(in Russian).—The rate of alk. hydrolysis, compared for EtOH (I), PhOH (II), 4-$HOC_6H_4SO_2C_6H_4$-ONa-4 (III), and 4-$HOC_6H_4SO_2Ph$ (IV) esters of AcOH and BzOH in a dioxane-H_2O mixt. was I < II < III < IV. The rate increased as the acidic properties of the alcs. became stronger. The esters of AcOH hydrolyzed easier than those of BzOH. Hydrolysis of esters of aromatic sulfonic acids. R. V. Vizgert. *Ibid.* 272-8(in Russian).—Hydrolysis rates of the I, II, III, and IV esters of $PhSO_3H$ were II < I < III < IV, contrary to the above results. For the acid constituents the rates were AcOH > BzOH > $PhSO_3H$. Substitutions in $PhSO_3H$ increased rates in the order NO_2 > Cl > Br > H. Gary Gerard

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

USSR/Organic Chemistry - Theoretical and General Questions on Organic Chemistry, E-1

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 756

Abstract: K_2, $2.98 \cdot 10^{-9}$. The pK of n-phenylsulfonic acid in water is 8.91. The values of K_1 for IV and V are 150-300 times the value of K for phenol; a similar increase is observed for Ia and IIa. The effect of RSO_2 groups as substituents on the phenol nucleus approaches that of the nitro group. The ratio K_1/K_2 for V is considerably smaller than for Ia-IIIa; this points to increased interaction between the hydroxyl groups on the two nuclei under the influence of the methyl groups.

Card 2/2

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Berkman, Ya. I.

Azo dyes with a polysulfonamide diazo component Ya. 2

Berkman and B. Y[illegible] Polytech. Inst. [illegible] Akad. [illegible] 1956, 695 [illegible]

[illegible] of dyed [illegible] outside factors [illegible] light, is increased by [illegible] properties of dyes [illegible] which increase their [illegible] to the surface. With [illegible] fibers (silk, [illegible] stability is similar [illegible] tanning properties [illegible] pothesis, [illegible] tanning groups [illegible] into the [illegible] with the same chromophore group. As tanning [illegible] the sulfonamide group was selected. $PhNHO_2SPh$, which is used in the synthesis of artificial tanning materials. [illegible] no. of diazo components of the general formula p-$HO_2SC_6H_4(NHO_2SC_6H_4)_xNH_2$-$m$, where x varied between 1 and [illegible] were prep[illegible], and [illegible] diazonium salts of the general formula p-$HO_2SC_6H_4(NHO_2SC_6H_4)_xN{=}N$-$m$ were obtained. The azo components tried were 2-naphthol, 2,6-naphthol [illegible] acid, salicylic [illegible] m-phenylenediamine [illegible] acid, 1,8-[illegible] soly. of the dyes in [illegible] the sulfonamide groups [illegible] all were readily [illegible] alkalies. Tests with skins tanned with the dyes [illegible] sulfonamide groups [illegible] the production of [illegible] lucent, parchment-like [illegible] With 4–5 groups the [illegible] were similar to those [illegible] tanning [illegible] The stability of the [illegible] coloration increased [illegible] the no. of the sulfon[illegible] the dye [illegible] their tanning [illegible] W. M. [illegible]

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

Berkman, Ya. P.

USSR / Chemical Technology. Chemical Products and Their Application. Leather. Fur. Gelatin. Tanning Agents. Technical Proteins. I-31

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, No 10520

Author : Berkman, Ya. P. and Sergeyeva, A.N.
Inst : Lvov ~~Polytechnic~~ Institute
Title : Synthesis of a Naphthalene-Sulfonic Dye for White Skins

Orig Pub : Nauch. zap. L'vovsk. politekhn. in-ta, 1956, No 2, 121-126

Abstract : The preparation of synthetic dyes for white skins by the condensation of naphthalene-β-sulfonic acid (I) and dihydroxydiphenylsulfone (II) with CH_2O has been investigated. The condensation is carried out in an aqueous medium at 100-120°. The mechanism of the reaction has not been established. Dye specimens have been prepared from pure I and technical sulfur masses containing various amounts of free H_2SO_4 as well as from technical sulfur masses and

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USSR / Chemical Technology. Chemical Products and Their Application. Leather. Fur. Gelatin. Tanning Agents. Technical Proteins. I-31

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, No 10520

Abstract : various combinations of I, II, and CH_2O. The optimum of CH_2O appears to be 0.5 mols per mole of I and II. The filling capacity of the dye increases with increasing concentration of II, as is shown by an increase in the tanning number of the skins from 17 to 59. By changing the ratio of I to II tanning agents for different types of skins can be prepared. Skins tanned with naphthalene sulfonic tanning agents are characterized by a pure white color which does not show signs of aging after prolonged storage. A faint yellowing of the color is observed when the skins are exposed to sunlight.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; LUSHINA, N.P.

Kinetics of acid hydrolysis of benzenesulfonamilides. Ukr. khim. zhur. 24 no.3:320-324 '58. (MIRA 11:9)

1.L'vovskiy politekhnicheskiy institut, kafedra obshchey i neorganicheskoy khimii.

(Benzenesulfonanilide) (Hydrolysis)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

AUTHORS: Vizgert, R. V., Berkmen, Ya. F. SOV/79-28-8-27/66

TITLE: On the Reactions of the Esters of the Aromatic Sulfonic Acid (Reaktsii efirov aromaticheskikh sul'fokislot) VII. Arylating Properties of the Dinitro-Phenyl Benzene Sulfonates (VII. Ariliruyushchiye svoystva dinitrofenilbenzolsul'fonatov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 8, pp. 2119-2122 (USSR)

ABSTRACT: It must be assumed that the aryl sulfonates show a similarity with the esters of carboxylic acids in the reactions of a nucleophilic substitution, in the case of a conversion with water, with alkali solutions, and amines. All these reactions proceed according to the acyl-oxygen mechanism. In this case, the alcohol radical does not lose its bond with its oxygen atoms (Refs 1-11). In contrast to the aryl sulfonates and the esters of carboxylic acids the alkyl sulfonates react like alkylating agents (Refs 12-16). Thus the fissure takes place at the alkyl in the case of a conversion with water, ammonia, and amines. The validity of the alkyl-oxygen mechanism for the aryl sulfonates could hardly be expected, since the oxygen is closely bound to the aromatic nucleus. In the present paper,

Card 1/3

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SOV/79-28-8-27/66

On the Reactions of the Esters of the Aromatic Sulfonic Acid. VII. Arylating Properties of the Dinitro-Phenyl Benzene Sulfonates

however, it was found that the dinitro-phenyl benzene sulfonates show a similarity with the alkyl sulfonates, i.e. that they may be hydrolyzed with water, alkali solutions, and are not subjected to a hydrolysis with acids. It could be assumed that this similarity may be found also in other reactions of nucleophilic substitution. In order to examine this case, a long series of experiments was carried out on the conversion of esters from 2,4-dinitro-phenol and benzene sulfonic-, p-chlorbenzene sulfonic-, and o-nitrobenzene sulfonic acid with ammonia, aromatic amines potassium thiocyanate, and potassium iodide. The corresponding substituted dinitro-diphenyl amines and the 2,4-dinitro-benzene thiocyanate were obtained. The separated reaction products indicate an alkyl-oxygen cleavage of the 2,4-dinitrophenolates and of the substituted benzene sulfonates. There are 21 references, 5 of which are Soviet.

ASSOCIATION: L'vovskiy politekhnicheskiy institut (L'vov Polytechnical Institute)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

On the Reactions of the Esters of the Aromatic Sulfonic Acid. VII. Arylating Properties of the Dinitro-Phenyl Benzene Sulfonates SOV/79-28-8-27/66

SUBMITTED: July 5, 1957

Card 3/3

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P., doktor khim.nauk; SHUTER, L.M., kand.khim.nauk

Synthesis and use of water-soluble chromium salts of fatty acids. Kozh.-obuv.prom. 2 no.7:18-20 Jl '60. (MIRA 13:8)
(Tanning) (Fatty acids)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; LUSHINA, N.P.

Kinetics of the acid hydrolysis of benzenesulfonanilides. Part 2: Effect of the nature and positions of the substituents in the nucleus of the amine on the rate of hydrolysis of benzenesulfonanilides. Ukr. khim. zhur. 26 no.4:502-504 '60. (MIRA 13:9)

1. L'vovskiy politekhnicheskiy institut.
(Benzenesulfonanilide) (Hydrolysis)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

KUSHNIR, S.V.; BERKMAN, Ya.P.

Hydrothermal decomposition of kainite. Ukr. khim. zhur. 26 no.4:531-534 '60. (MIRA 13:9)

1. L'vovskiy politekhnicheskiy institut.
(Kainite)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; SHUTER, L.M.

Structure of products of the condensation of 4,4'-dioxydiphenyl sulfone with formaldehyde. Zhur. ob. khim. 31 no. 11:3675-3678 N '61. (MIRA 14:11)

(Sulfone) (Formaldehyde)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

LUSHINA, N.P.; BERKMAN, Ya.P.

Effect of substituents on the acid dissociation of benzenesulfonanilide. Zhur. ob. khim. 32 no.1:280-284 Ja '62. (MIRA 15:2)
(Benzenesulfonanilide)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; LUSHINA, N.P.

Mechanism of benzenesulfonanilide acidic hydrolysis. Zhur.ob.khim. 32 no.5:1659-1662 My '62. (MIRA 15:5)

1. L'vovskiy politekhnicheskiy institut.
(Benzenesulfonanilide) (Hydrolysis)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P., doktor tekhn.nauk, prof.

Synthetic tanning materials and auxiliary products for leather manufacture. Kozh.-obuv.prom. 5 no.1:7-11 Ja '63. (MIRA 16:2)
(Tanning materials) (Leather)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; SHUTER, L.M.

Synthesis and use of water-soluble fatty acids of chromium salts. Kozh.-obuv.prom. 2 no.8:18-19 Ag '60. (MIRA 13:9)
(Tanning) (Chromium)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; SHUTER, L.M.; TRAKHTENBERG, S.I.

New protein acrylate film-forming agents for dye coating of leather. Kozh.obuv.prom. 4 no.1:20-23 Ja '62. (MIRA 15:3)
(Films (Chemistry)) (Dyes and dyeing--Leather)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; LUKAVSKAYA, L.Ye.

Synthesis and study of the properties of sulfone ester disazo dyes based on dihydroxydiphenyl sulfone. Izv. vys. ucheb. zav.; khim. i khim. tekh. 6 no.3:471-474 '63. (MIRA 16:8)

1. L'vovskiy politekhnicheskiy institut, kafedra obshchey i neorganicheskoy khimii.
(Azo dyes) (Sulfone)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

YAREMCHUK, N.A.; SHUTER, L.M.; BERKMAN, Ya.P.

Amphoteric "LAF" tanner made from extractive phenols.
Kozh.-obuv. prom. 4 no.7:28-29 Jl '62. (MIRA 17:1)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; KLIMOVICH, A.I.

Reduction of calcium orthophosphate by natural methane. Izv.vys. ucheb.zav.; khim.i khim.tekh. 7 no.6:953-957 '64.

(MIRA 18:5)

1. L'vovskiy politekhnicheskiy institut, kafedra obshchey i neorganicheskoy khimii.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

LUSHINA, N.P.; BERKMAN, Ya.P.

Mechanism of the acid hydrolysis of substituted benzenesulfanilides. Dokl. IPI 5 no. 1/2:3-6 '63. (MIRA 17:6)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

ROMANIV, V.V.; BERKMAN, Ya.P.

Industrial experimental data on the production of combined-type synthetic tanning agents. Dokl. LPI 5 no. 1/2:11-14 '63. (MIRA 17:6)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

SHEVCHENKO, M.L.; BERKMAN, Ya.P.

Preparation of diazo constituents, derivatives of paraphenylene-diaminesulfonic acid. Dokl. LPI 5 no. 1/2:59-64 '63.
(MIRA 17:6)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ya.P.; KLIMOVICH, A.I.

Reduction of phosphates by natural methane. Dokl. LPI 5 no. 1/2: 130-133 '63. (MIRA 17:6)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

YAREMCHUK, N.A.; SHUTER, L.M.; BERKMAN, Ya. P.

Obtaining cationic and amphoteric water-soluble condensation products of amines and phenols with dimethylolurea. Dokl. LPI 5 no. 1/2:55-58 '63. (MIRA 17:6)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERMAN, Ya.P.; ROMASHKIN, M.P.

Acid monoazo dyes with a polysulfonamide azo constituent. Dokl. LPI 5 no. 1/2:176-181 '63. (MIRA 17:6)

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L 44592-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6013275 (A) SOURCE CODE: UR/0413/66/000/008/0078/0078

31
B

INVENTOR: Berlin, A. A.; Berkman, Ya. P.; Shuter, L. M.

ORG: none

TITLE: Method of obtaining graft copolymers of carboxymethylcellulose and unsaturated monomers. Class 39, No. 180791

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 78

TOPIC TAGS: copolymer, monomer, copolymerization, polymerization initiator, graft copolymer

ABSTRACT: An Author Certificate has been issued for a method of obtaining graft copolymers of carboxymethylcellulose and unsaturated monomers in the presence of initiators of graft copolymerization reaction in a hydrogen medium. To obtain water-insoluble, film-forming products, carboxymethylcellulose is subjected to preliminary treatment with water-soluble peroxide compounds. The treatment of carboxymethylcellulose by

Card 1/2 UDC: 678.546.11.9-416:678.744.325

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ACC NR: AP6013275

peroxide compounds occurs with the pH of the medium not lower than 8. [Translation] [NT]

SUB CODE: 11/ SUBM DATE: 10Oct64/

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

Berkman, Ye. A.

I. A. Kedrinskiy, A.I. Avgustinnik, Ye. A. Berkman. Experimental data on the catalytic activity of refractory metal electrodes in electrochemical reactions.

Title: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963).

Source: Atomnaya energiya, v. 15, no. 3, 1963, 266-267

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

FEDOT'YEV, N.P.; GRILIKHES, S.Ya.; BERKMAN, Ye.A.; ZIL'BERMAN, B.Ya.

Formation of passive oxide films during an electrochemical polishing of aluminum. Zhur. prikl. khim. 38 no.4:834-839 Ap '65. (MIRA 18:6)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, YE. M.

13

PROCESSES AND PROPERTIES INDEX

Colophony glue with a high content of free resin. A. P. Petrov and E. M. Berkman. *Bumazhnaya Prom.* 19, No. 1, 33-9(1941).—Expts. were made in lab. and plant to develop a colophony glue of a high content of free resin by use of protective colloids. The compn. was approx. water 150 l. and calcined soda 5.4, bicarbonate 2.7, rosin 200 kg. and NH_3 (22%) 4.4 l. The amt. of colloid was 2-5.5% by wt. of rosin. The mixt. was heated for 3-6 hrs. at 85-90°. Casein was the most effective colloid. Suspensions contg. 5-5.5% casein were most stable. The new glue retains the filler on paper better than does ordinary white glue (low content of resin). Details of production are given. B. Z. Kamich

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

1A

The introduction of high rosin size to paper mills. K. M. Berkman and D. M. Elvate. *Bumazh. Prom.* [illegible]. Decreased rosin consumption in wt. percentage of dry cellulose, decreased clay consumption, and increased paper strength were obtained in sizing paper with size emulsions of high free-rosin content; 5% casein was used to help stabilize the alk. rosin emulsion which had a rosin concn. of 500 g./l. and a free-rosin content of 80%. Details of a com. emulsion installation are given. Marshall Sittig

25

METALLURGICAL LITERATURE CLASSIFICATION

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BERKMAN, E.M.; PETROV, A.P.

Frost-resistant, concentrated rosin adhesive. Patent U.S.S.R. 77,916, Dec. 31, 1949.
(CA 47 no.20:10870 '53)

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25

High-rosin paraffin size. E. M. Berkman. *Bumazn. Prom.* 24, No. 5, 15-18(1949); cf. *C.A.* 43, 9444h.—An increasing degree of sizing for the same amt. of size was obtained in the order—"white" rosin size—rosin-paraffin size—high-rosin size—high-rosin-paraffin size. The optimum rosin:paraffin ratio was found to be about 60:40. Optimum fold properties were obtained from high-rosin-paraffin-sized paper when the paraffin content of the size was 60%; optimum breaking length was obtained at 50% paraffin content.

Marshall Sittig

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Improving the quality of paper for offset printing. E. M. Berkman. *Bumazh. Prom.* 25, No. 1, 10-14(1950).—The principles of offset printing and the requirements of offset printing paper are described. The most important requirement of offset printing paper is a min. deformation, which is less crit. in the cross-machine direction since it can be corrected to some extent on the press; the degree of deformation upon moistening the paper should be less than 0.5% in machine direction and 2% cross-machine direction. Deformation increases with increasing hemicellulose content of the pulp, and a bleached pulp is preferable to an unbleached. Deformation is decreased by the addn. to the pulp of rosin or high-polymer size, melamine resin (0.25-0.5% on bone-dry fiber), or clay. The addn. of starch (above 3%) or silica, or a high degree of beating, increases deformation, but it is recommended that 1% starch be added to the pulp. Sheet d. should be within the limits 0.75-0.85 g./cc. At lower d. the sheet is too soft and porous, causing show-through, a sepn. of fibers on the sheet surface, and dusting of the paper. At a sheet d. above 0.85 g./cc., the paper is too hard, and ink absorptivity is poor. Addn. of rosin size up to 2% of the bone-dry fiber wt. reduces deformation of the paper upon wetting, and gives better ink absorption and a tighter bond between ink and paper. Addn. of clay within limits of 10 to 13% gives a smoother, more opaque sheet with a more uniform surface. A clay content above 13% results in show-through, a weak sheet, sepn. of the fiber from the sheet surface, and dusting because of the low unit pressure used in offset printing, the paper should have a high degree of smoothness (not less than 9 sec. Bekk). Consistency in the beater should be less than 3.5% to avoid parchmentization; the beater knives should be not thicker than 8 mm. and the bedplate bars 4-5 mm.; beating should be carried to 26-8° S.-R. in order that the pulp after the final jordan should be not more than 30° S.-R. Headbox consistency should be within the limits 0.55-0.75% for a basis wt. sheet of 70-100 g./sq. m., and 0.75-1.0% for a basis wt. of 100-160 g./sq. m. In order to increase orientation of the fiber in machine direction, the flow of stock onto the wire should be somewhat less than the machine speed, and the shake should be used, with 3-6 mm. amplitude and 200-50 vibrations per min. The surface temp. of the drier drums should be increased stepwise, the temp. of the first drum being not more than 50°, and a max. felt tension should be used in the driers. The length of the cut sheet should correspond with machine direction, and a vapor-barrier paper should be used in wrapping.

John Lake Keays

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BERKMAN, Ye.M.; FLYATE, D.M.

The sizing agent in paper rosin size. Bum. prom. 28 no.6:9-14 Je '53. (MLRA 6:6)

(Gums and resins) (Paper industry)

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BERKMAN, Ye.M.

Errors in the description of production and properties of paper. ("Knowledge of the printing materials". V.A. Istrin. Reviewed by E.M. Berkman). Bum.prom. 29 no.5:3 My '54. (MLRA 7:7)
(Paper) (Istrin, V.A.)

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BERKMAN, Ye.M., inzhener.

Cockling of paper. Bum.prom. 30 no.2:13-15 F '55. (MLRA 8:4)
(Paper)

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BERKMAN, YE. M.

USSR/Chemical Technology - Chemical Products and Their Application. Wood Chemistry Products. Cellulose and Its Manufacture. Paper, I-23

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63385

Author: Berkman, Ye. M.

Institution: None

Title: Concerning the Article "Production of Printing Paper of Low Weight per Square Meter"

Original Periodical: Bum. prom-st', 1955, No 12, 13

Abstract: Pointed out are the incorrect definitions of the concepts of stiffness, softness and resilience of paper given in the article by L. A. Kantor. See Referat Zhur - Khimiya, 1955, 39031.

Card 1/1

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RYUKHIN, N.V., kandidat tekhnicheskikh nauk; BERKMAN, Ye.M., inzhener.

Improve the quality of paper used for labels. Bum. prom. 31 no.7: 15-16 Jl '56. (MLRA 9:10)

(Paper)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204920016-7

BERKMAN, Ye.M., inzhener.

Stretch in paper. Bum. prom. 31 no.11:12-14 N '56. (MLRA 10:2)

(Paper testing)

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BERKMAN, YE.M.

IVANITSKIY, Yu.P., insh.; BERKMAN, Ye.M.

"Manufacture of wall and decorative paper" by P.V. Prober. Reviewed by IU.P. Ivanitskii, E.M. Berkman. Bum. prom. 32 no.7:29-30 Jl '57. (Wallpaper) (Paper industry) (MIRA 10:11) (Prober, P.V.).

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SOV/137-59-3-7200
Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 322 (USSR)

AUTHOR: Berkman, Ye. M.

TITLE: Preparation of a Bimetallic Offset Plate of Chemically Copper-plated Aluminum (Izgotovleniye bimetallicheskoy ofsetnoy formy na alyuminii s khimicheskim omedneniyem)

PERIODICAL: Poligr. proiz-vo, 1958, Nr 6, pp 15-16

ABSTRACT: The author has refined a formula for a chemical copper-plating solution which produces a layer of Cu, 3-4μ thick, that adheres evenly and firmly to a surface. The composition of the solution is as follows: Isopropyl alcohol 1000 cc, Cu_2Cl_2 [Russian original reads Tu_2Cl_2. Transl. note] 12 g, and HCl (28.5%) 20 cc. The solution is prepared by the following procedure: The Cu_2Cl_2 is pulverized and poured into the alcohol; then HCl is added and mixed for 60-80 min until the complete dissolution of the salt is achieved. To accomplish the copper plating, the solution is poured onto the surface of the Al plate and rubbed with a gauze wad. In the course of this procedure Cu accumulates on the plate as a result of the following reaction:

$$2Al + 3Cu_2Cl_2 = 2AlCl_3 + 6\,Cu.$$

Card 1/2

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