

PETUKHOV, S.P., SMOL'YANINOVA, N.K.; SPIRINA, A.S.; SINITSYNA, N.S., red.;
BYKOVA, M.G., red.; TRUKHINA, O.N., tekhn. red.

[Growing ~~berry~~ nursery stock] Vyrashchivanie posadochnogo materiala iagodnykh kul'tur. Moskva, Sel'khozizdat, 1962. 206 p.
(MIRA 16:2)

(Berries) (Nursery stock)

CHEREMISIN, V. N.

"Investigating Middle-Temperature Coking of Gas Coals of the Kuznets Basin."
Chem. Tech. Sci., Tomsk Polytechnic Inst, Tomsk, 1954. (RZhKhim, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (13)
SO: Sum. No. 598, 29 Jul 55

Smol'yaninova, N.M.

AUTHORS: Ebler, I.V., Dr. of Tech.Sc. and Smol'yaninova, N.M., 158
Cand. Tech. Sc. (Tomsk Polytechnical Institute of
S. M. Kirov).

TITLE: The influence of heating temperature on coking properties
of some coals from the Kuznetsk Basin. (Vliyaniye
temperatury nagreva na spekayushchiye svoystva
nekotorykh ugley Kuznetskogo Basseyna).

PERIODICAL: "Koks i Khimiya" (Coke and Chemistry), 1957, No.3,
pp. 21-24 (U.S.S.R.)

ABSTRACT: An investigation of the influence of the temperature to
which coals were heated on their coking properties
(Table 1) was carried out. For the evaluation of coking
properties the method of I. V. Gebler (Koks i Khimiya,
1939, Nos. 1 and 2) was used. This is based on the
amount of sand bound by softened coal penetrating into
the spaces between the sand grains under the pressure
of a load. The amount of sand so bound in grams
multiplied by 100 gives the "softening number". The
dependence of the softening numbers on temperature for
various coals and coal blends is given on the graph in
the form of curves. The slope of the curve before
reaching the maximum is considered as representing the
thermal stability of the coal mass while that after the
maximum as representing the thermal stability of the

GEBLER, I.V., prof.; SMOL'YANINOVA, N.M., kond. tekhn. nauk;
LIVSHITS, D.L., red.

[The problem of metallurgical fuel for the metallurgy of
Tomsk Province iron ores] Problema metallurgicheskogo
topliva dlia ispol'zovaniia zheleznykh rud Tomskoi oblasti.
Tomsk, Izd-vo Tomskogo univ. 1959. 14 p. (MIRA 16:10)
(Tomsk Province--Iron ores) (Fuel)

SMOL'YANINOVA, N.M.; GEBLER, I.V.

Medium-temperature coking of gas coal from the Kuznetsk Basin.
Izv.Sib.otd.AN SSSR no.4:29-37 '59. (MIRA 12:10)

1. Tomskiy politekhnicheskii institut im. S.M.Kirova.
(Coke)

SMOL'YANINOVA, N.M.; KAPLIN, A.A.; VASIL'YEVA, L.M.

Stability of coke in the hot state. Koks i khim. no. 5:25-28 '61.
(MIRA 14:4)

1. Tomskiy politekhnicheskii institut (for Smol'yaninova, Kaplin).
2. Sibirskoye otdeleniya AN SSSR (for Vasil'yeva).
(Coke---Thermal properties)

SHCHERBA, I.M.; RO SHOV, Ya.S.

Effect of the temperature and velocity of heat carriers on artificial
drying of machine peat. Izv.Vi 111.91-94 '61.

(MIA 16:9)

I. Predstavleno prof. doktorom I.V. Gublerom.
(Peat--Drying) (Heat--Transmission)

SMOL'YANINOVA, N.M.; SMOL'YANIN, V.S.

Effect of the temperature of thermal processing of gas coals on
the yield and composition of lower phenols. Izv. TPI 126:15-20
'64. (MIRA 18:7)

SMAGL' YANINOVA, N. N.

3700

Bertrandite from the granite massive of Kounradskii, Central Kazakhstan. F. V. Chukhrov and N. N. Smol'yaninova. *Doklady Akad. Nauk S.S.S.R.* 107, 678-681 (1956). Previously, bertrandite (I) was known in the U.S.S.R. from the aquamarine deposits of the Irkutka-Tigeretsk Mts., Altai, Siberia. The occurrence of the Kazakhstan steppe is remarkable because of high-temp. quartz veins in greisen granites which contain I assocd. with muscovite, K feldspar, pyrite, chalcopyrite, sphalerite, fluorite, magnetite, beryl, wolframite, molybdenite, and gilbertite. I is never abundant, although wide-spread, in the rocks. The colorless, water-clear crystals of rarely more than 1 mm. in diam. are highly brittle, with excellent cleavage in 2 perpendicular planes; biaxial, neg.; $\alpha = 1.588$; $\gamma = 1.616$; $d. 2.600$. Four crystal habits are described. I is probably formed in the ultimate stages of the quartz veins; but before fluorite and gilbertite, although after wolframite and muscovite. I is slightly changed into a hydrous Ca-contg. mineral of unknown compn. No indication is observed that I was formed by weathering from beryl.

2

Handwritten initials or signature.

SMOL'YANINOVA, N.N.; MOLEVA, V.A.

Phenacite from Batystau deposits (Central Kazakhstan). Dokl.
AN SSSR 112 no.4:749-752 F '57. (MLRA 10:4)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii. Predstavleno akademikom D.I. Shcherbakovym.
(Kazakhstan--Phenacite)

SMOL'YAHINOVA, N.N.; SENDEROVA, V.M.

Arseniosiderite from southern Kirghizia. Trudy Min. muz.
no.14:250-258 '63. (MIRA 16:10)

(Kirghizistan--Arseniosiderite)

SMOL'YANINOVA, N.N.; SENDEROVA, V.M.

Find of chillagite in the Akchatau deposit. Zap. Vses.
min. ob-va 92 no.5:588-594 '63. (MIRA 17:1)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii (IGEM) AN SSSR, Moskva.

ENCL. 1/2/1955, P. 1.

Some of a personal collection of items and the formation of benzene-like
on iron reflectors. Study Materials, 1955.

(NISA 18:8)

ALYAVDIN, V.F.; BONSHTEDT-KUPLETSKAYA, E.M.; GODLEVSKIY, M.N., doktor geol.-
mineral.nauk; KOMKOV, A.I.; KUKHARENKO A.A., prof.; SAL'DAU, E.P.;
SMOL'YANINOVA, N.N.; BORNEMAN-STARYNKEVICH, I.D.; TATARSKIY, V.B.,
prof.; FRANK-KAMENETSKIY, V.A.

From the Commission on New Minerals of the Minerological
Society of the U.S.S.R. Zap.Vses.min.ob-va 94 no.5:555-
565 '65. (MIRA 18:11)

1. Komissiya po novym mineralam Vsesoyuznogo mineralogicheskogo
obshchestva. 2. Predsedatel' Komissii po novym mineralam
Vsesoyuznogo mineralogicheskogo obshchestva (for Frank-
Kamenetskiy). 3. Zamestitel' predsedatelya Komissii po novym
mineralam Vsesoyuznogo mineralogicheskogo obshchestva (for
Bonshtedt-Kupletskaya). 4. Sekretar' Komissii po novym
mineralam Vsesoyuznogo mineralogicheskogo obshchestva (for
Sal'dau).

SMOL'YANINOVA, N.N., mladshiy nauchnyy sotrudnik

Swedish fly in Khakassia. Zashch. rast. ot vred. i bol. 4 no.2:
24-25 Mr.-Ap '59. (MIRA 16:5)
(Khakass Autonomous Province—Frit flies)

SMOL'YANINOVA, H.S., PYL'TSOV, I.M., KLEMENOVA, Ye.S.

Congenital diaphragmatic hernia of the anterior mediastinum simulating epileptoid seizures. Vest.khir. 80 no.4:114-115 Ap'58 (MIRA 11:5)

1. Iz 2-go khirurgicheskogo otdeleniya (zav. - prof. G.V. Alipov) i rentgenovskogo otdeleniya (zav. - prof. P.N. Mazayev) Instituta khirurgii im. A.V. Vishnevskogo AMN SSSR. Adres avtorov: Moskva, B. Serpukhovskaya, d.27, Institut khirurgii im. A.V. Vishnevskogo AMN SSSR.

(HERNIA, DIAPHRAGMATIC, inf.& child
congen., simulating epilepsy (Rus))
(EPILEPSY, differ, diag.
congen. diaphragmatic hernia (Rus))

SMOL'YANINOVA, N. S. Cand Med Sci -- (diss) "X-ray picture of changes in the gastrointestinal tract following the removal of a lung or part of it (Clinical and experimental studies)." Mos, 1959. 15 pp (Acad Med Sci USSR), 200 copies (KL, 43-59, 128)

SMOL'YANINOVA, N.S.; ITKIN, S.I.

Anatomic and functional changes in the gastrointestinal tract following total or partial resection of the lung; experimental study. Grud. khir. 2 no.3:73-74 My-Je '60. (MIRA 15:3)

1. Iz rentgenovskogo otdoleniya (zav. -- prof. P.N. Mazayev) Instituta khirurgii imeni A.V. Vishnevskogo (dir. -- deystvitel'nyy chlen AMN SSSR prof. A.A. Vishnevskiy) AMN SSSR. Adres avtorov: Moskva, B. Serpukhovskaya ul., d.27, Institut khirurgii imeni A.V. Vishnevskogo.

(ALIMENTARY CANAL)

(LUNGS--SURGERY)

SMOL'YANINOVA, N.S.; LOKSHINA, K.A.

X-ray observations of the motor evacuatory function of the stomach following reconstructive plastic operations. Klin.khir. no.8:16-18 J1 '62. (MIRA 15:11)

1. Rentgenologicheskoye otdeleniye (zav. - prof. P.N.Mazayev) i tret'ye khirurgicheskoy otdeleniye (za. - prof. G.D.Vilyavin) Instituta khirurgii imeni A.V.Vishnevskogo AMN SSSR.
(STOMACH--MOTILITY)

LOKSHINA, K.A.; SMOL'YANINOVA, N.S.

Cancer of the small intestine; a case from clinical practice.
Sov.med. 26 no.1:113-115 Ja '63. (MIFA 16:4)

1. Iz rentgenologicheskogo otdeleniya (zav. - prof. P.N.Mazayev)
Instituta khirurgii imeni A.V.Vishnevskogo (dir. - deystvitel'nyy
chlen AMN SSSR prof. A.A.Vishnevskiy) AMN SSSR.
(INTESTINES—CANCER)

BELOUS, I. Kh., st. nauchn. sotr.; KAZANSKIY, Yu. P., VDOVIN, V. V.;
KLYAROVSKIY, V. M., KUZNETSOV, V. I.; NIKOLAYEVA, I. V.;
NOVOZHILOV, V. I.; SENDERZON, E. M.; AKAYEV, M. S.; BABIN,
A. A., BERDNIKOV, A. P.; GORYUKHIN, Ye. Ya.; NAGORSKIY, M. P.;
PIVEN', N. M.; BAKANOV, G. Ye.; GEBLER, I. V.; SMOLYANINOV,
N. M., SMOLYANINOVA, S. I.; YUSHIN, V. I.; D'YAKONOVA, N. D.;
LEZAFOV, N. M.; KASHYANOV, V. A.; GOL'BERT, A. I.; SILOROV,
A. P.; GARLASH, A. A.; BYKOV, M. S.; BORODIN, L. V.; RYCHKOV,
I. P.; KUCHIN, M. I.; SHAKHOV, F. N., glav. red.; SHIRAKOVSKAYA,
L. I., red.

[West Siberian iron ore basin] Zapadno-Sibirskii zhelezorud-
nyi bassein. Novosibirsk. Red.-izd. otdel Sibirskogo otd-
nitiya AN SSSR, 1967. - 227 p. (MIRA 17:12)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geo-
logii i geofiziki. 2. Institut geologii i geofiziki Sibirskogo
otdeleniya AN SSSR (for Belous, Kazanskiy, Vdovin, Klyarovskiy,
Kuznetsov, Nikolayeva, Novozhilov, Senderzon). 3. Institut
gornogo dela (for Akayev). 4. Novosibirskoye geologicheskoye
upravleniye Ministerstva geologii i okhrany nedr SSSR (for
Babin, Berdnikov, Goryukhin, Nagorskiy, Piven').

(Continued on next card)

BELOUS, N Kl. --- (continued). Card 11.

Tomskiy politekhnicheskii institut (for Galanov, Golov, Smolyaninov, Smolyaninova). 5. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya (for Yushin, Diyakonova, Rezapov, Kashtanov, Gol'bert). 6. Institut ekonomiki sel'skogo khozyaystva (for Garmash). 7. Sibirskiy metallurgicheskii institut (for Bykov, Borodin, Rybkov). 8. Tomskiy inzhenerno-stroitel'nyy institut (for Kuchin). 9. Otdel-korrespondent AN SSSR (for Shukhov).

SMOL'YANINOVA, V.L.; BOGOSLAVSKIY, A.I.; GARKAVI, R.A. [deceased].

Comparative evaluation of different methods of investigating
the functional state of the visual analyzer in cataracts.
Uch.zap. GNII glaz.bol. no.8:17-39'63. (MIRA 16:9)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut glaznykh
bolezney imeni Gel'mgol'tsa.
(CATARACT) (OPTIC NERVE)

PROCESS AND PROPERTIES INDEX

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Preparation of vanillin from sawdust and sulphite liquor. P. P. SOROKIN and E. K. SMOLJANKOVA (J. Gen. Chem. Russ., 1934, 4, 1424—1433).—Kürschner's method (A., 1925, i, 1387) gives trustworthy results for determination of vanillin (I); the raw product should first be freed from volatile aldehydes by steam-distillation. Sulphite liquor gives higher yields of (I) than does sawdust, when treated by Kürschner's method. The yields are not increased when oxidizing agents are present during hydrolysis, as would follow from Freudenberg's theory of the structure of lignin (A., 1933, 276).

R. T.

A 14.31.A METALLURGICAL LITERATURE CLASSIFICATION

S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
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PROCESSES AND PROPERTIES INDEX

Production of citral from coriander oil V. I. L'vov, yants and E. K. Smol'yannova. *Sintezy Dushistykh Veshchest, Sbornik Statei* 1938, 243 6, *Khimiya. Referat. Zhur.* 1940, No. 4, 117. Soviet coriander oil contg. up to 60% of linalool was used as the starting raw material. The oil was oxidized with $K_2Cr_2O_7$ or CrO_3 . High yields of citral were obtained only in cases when an excess of the oxidizing agent was used. The time of the oxidation process depends on the temp. conditions. From 10 kg. of coriander oil was obtained 0.2 kg. of the oxidized product contg. 48-50% of citral. Since this product was used for the manuf. of ionone and methyionone no attempts were made to obtain citral in the pure state. *Cl. C. I. 28, 1466.* W. R. H.

METALLURGICAL LITERATURE CLASSIFICATION

10

The chemistry of Perkin's reaction. New method of preparation of coumarin and its application on a large scale.
 V. I. Isigulyants and E. K. Smol'yannova. *J. Applied Chem. (U. S. S. R.)* 11, 949-54 (in French) (1954): 1948.
 Tech. α -HOC₆H₄CHO was prepd. by the Fiemann-Reimer method. Isocoumarin was prepd. by the Perkin method modified by Kalnin (cf. *C. A.* 23, 828) as follows: 180 g. of calcined K₂CO₃, 520 g. of Ac₂O and 200 g. of tech. α -HOC₆H₄CHO (50-60%) were placed in a 2-l. flask provided with a reflux condenser, a cooling system and a thermometer. Immediately after adding the Ac₂O to the K₂CO₃ the temp. of the reaction mixt. rose to 110-20° (due to the heat of reaction) with a violent evolution of CO₂. After that, the reaction mixt. was heated at 180-200° for 1 hr. simultaneously distg. off the AcOH and AcOPh formed and the excess of Ac₂O. Upon cooling to 110-40° the contents of the flask were poured into 5 vols. of cold water. The crude coumarin was extd. with 400-500 cc. of PhMe. The ext. was washed with water (to remove AcOH) and steam-distd. (to remove the PhMe and AcOPh). The residue was distd. *in vacuo*, yielding coumarin which was then crystd. from 95% EtOH, yielding 75% of pure isocoumarin. The method was applied on a larger scale using 25 times of the above amts. of the reactants.
 A. A. Podedorny

ASH-35A METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UU UV UW UX UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VU VV VW VX VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WU WV WW WX WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

02

Production of methylnonyl-acetaldehyde and methyl-octylacetaldehyde. E. K. Smol'yanova. *Sintezy Duvistykh Veshchestv, Sbornik Statei* 1939, 81-5; *Khim. Referat. Zhur.* 1940, No. 1, 112. — Me nonyl ketone (an intermediate product in the production of methylnonyl-acetaldehyde) was obtained from capric acid (according to the method of Sabatier) which in turn was obtained from the vat residue of fusel oil. Optimum conditions for its production are: temp. of the reaction 420-50°, ratio of capric acid to AcOH 1.0:1.5-2.0, velocity of passing these acids over MnO 100 g. per 2 hrs. 80% AcOH can be used instead of glacial AcOH. The yield was 10%. Methylnonyl-acetaldehyde was obtained according to the method of Darzens (cf. C. A. 27, 1323) by condensation at 38-40° of Me nonyl ketone with ClCH₂CO₂Et in the presence of NaOEt and a subsequent saponification of the Et glycolate. The yield was 40.7-46.1%. W. R. Hunt

COMMON ELEMENTS

WATERGAS INDEX

ASBESTOS METALLURGICAL LITERATURE CLASSIFICATION

13000 13100 13200 13300 13400 13500 13600 13700 13800 13900 14000 14100 14200 14300 14400 14500 14600 14700 14800 14900 15000 15100 15200 15300 15400 15500 15600 15700 15800 15900 16000 16100 16200 16300 16400 16500 16600 16700 16800 16900 17000 17100 17200 17300 17400 17500 17600 17700 17800 17900 18000 18100 18200 18300 18400 18500 18600 18700 18800 18900 19000 19100 19200 19300 19400 19500 19600 19700 19800 19900 20000 20100 20200 20300 20400 20500 20600 20700 20800 20900 21000 21100 21200 21300 21400 21500 21600 21700 21800 21900 22000 22100 22200 22300 22400 22500 22600 22700 22800 22900 23000 23100 23200 23300 23400 23500 23600 23700 23800 23900 24000 24100 24200 24300 24400 24500 24600 24700 24800 24900 25000 25100 25200 25300 25400 25500 25600 25700 25800 25900 26000 26100 26200 26300 26400 26500 26600 26700 26800 26900 27000 27100 27200 27300 27400 27500 27600 27700 27800 27900 28000 28100 28200 28300 28400 28500 28600 28700 28800 28900 29000 29100 29200 29300 29400 29500 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PROCESSES AND PROPERTIES INDEX

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Production of benzyl alcohol and benzyl acetate B. K. Smol'yannikov and L. B. Gurevich. *Sintezy Dushklykh Veshchestv, Sbornik Statei* 1939, 15(1)-4; *Khim. Referat. Zhur.* 1940, No. 4, 114-16.—A new production method for obtaining benzyl acetate suitable for *perfumery purposes* (contg. no halide compds.) has been developed. Benzyl alc., obtained from BzH according to the modified method of Davidson and Bogert (*C. A.* 29, 4341¹), was used as the starting substance. The changes consisted in replacing MeOH with EtOH, lowering the reaction temp. from 65-75° to 50-60° and decreasing the amt. of base from 3 to 1.62 mols. BzH was obtained by oxidizing toluene. This gave a complete absence of Cl-contg. products. Acetylation of benzyl alc. was carried out with 80% AcOH for 1 hr. W. R. Heim

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METALLURGICAL LITERATURE CLASSIFICATION

ALUMINA INDEX

1ST AND 2ND LETTERS

MATERIAL INDEX

WATER INDEX

3RD LETTER

4TH LETTER

5TH LETTER

6TH LETTER

7TH LETTER

8TH LETTER

9TH LETTER

10TH LETTER

11TH LETTER

12TH LETTER

13TH LETTER

14TH LETTER

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100TH LETTER

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

10

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Production and purification of coumarin. E. K. Smol'yaninova. *Sintezy Dushistykh Veshchestv, Sbornik Statei 1939-1962-5; Khim. Referat. Zhur.* 1940, No. 4, 116. --S. improved the method for purifying coumarin by obtaining bisulfite compds. with NaHSO₃ (I). Optimum temp. conditions and the optimum amts. of oleum used for decomp. the bisulfite compl. were detd. The amt. of I was decreased by 30%. Only by means of this method can coumarin be purified from 3-methylcoumarin, which forms no compds. with I. The new method for purifying coumarin from phenolic compds. is based on the ability of coumarin to dissolve in 60% H₂SO₄ and of phenolic impurities to condense with formalin in an acid medium, forming tars which can be easily sepd. from the coumarin soln. in H₂SO₄. Dilt. of the H₂SO₄ soln. of 52% coumarin with water produces 80% of coumarin suitable for *perfumery purposes*. The phenolic impurities influence the formation of coumarin crystals and decrease the yield obtained by crystn. W. R. Henn

ASB S LA METALLURGICAL LITERATURE CLASSIFICATION

120HI SIV212V

430HI S0H10Y

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

COMPOUND ELEMENTS

MATERIALS INDEX

COMPOUND SYMBOLS INDEX

The production of vanillin from wood and sulfite liquors. P. P. Shorugin and E. K. Smolyaninova. *J. Gen. Chem.* (U. S. S. R.) 4, 1428-33(1934). Vanillin (I) can easily be detected in preps. from vegetable sources by its odor, even when present in such small amts. that quant. analysis is impossible. It is difficult to det. I in such materials and very difficult to isolate it in cryst. form. The quant. method of Kirschner (C. A. 26, 2724, 2948) employing $m\text{-ONC}_6\text{H}_4\text{CONHNH}_2$ as reagent is superior to other methods, e. g., NaHSO_3 and NH_4OH , and gives accurate values if H_2O_2 reactants are first removed. S. and S. have improved K.'s method and obtained lower values. The crude I was dissolved in Na_2CO_3 soln. and steam-distd. to remove volatile aldehydes; the I remains as phenolate. Acidification with H_2SO_4 , extn. with Et_2O , removal of the Et_2O , and soln. in a small vol. of alc. were followed by pptn. with the reagent as directed by K. Sulfite liquors were more suitable as raw material than either sawdust or isolated lignin (II). The largest yield (0.8%) was obtained by hydrolysis with NaOH employed in the ratio of 1.3 parts NaOH to 1 part of dry substance and heating for 7 hrs. Tar formation was increased by substituting Na_2CO_3 for NaOH . Oxidative (CrO_3 and KMnO_4) decompn. of II did not give higher yields of I. This is considered evidence against Freudenberg's formula for II.

Lewis W. Butz

AND SIA METALLURGICAL LITERATURE CLASSIFICATION

SMOL'VANIKOVA, E. K.

Intermediates in the synthesis of perfume substances.

I. Synthesis of 1,14-tetradecanediolic acid. V. M. Rodionov, E. A. Ogorodnikova, N. N. Shevryakova, E. K. Smol'vanikova, and V. N. Belov. *Zhur. Obshchei Khim.* 1959, 33, 1830-1833.

—To the reaction mixt. (330 g.) of EtOAc with 0.5 mole EtONa is added 45 g. $(\text{CH}_2)_{10}\text{Br}$, and the mixt. is stirred 40-5 hrs. at 78-80°; after treatment with 200 ml. H_2O , sepn. of the org. layer, washing it with aq. NaCl, concn. *in vacuo*, and addn. of the residue (58-62 g.) to 150 g. powd. KOH and 80 ml. H_2O over 1 hr. at 95-100° (temp. must be below 110°), heating to 100° 2 hrs. longer, the cooled mixt. was dild. with 500 ml. H_2O and acidified to Congo red with 1:1 HCl, yielding 35-7 g. $(\text{CH}_2)_{10}(\text{CO}_2\text{H})_2$ (Ia); crystn. from hot 50% EtOH gave 60% I, m. 114-18°, contg. some 15% $\text{HO}_2\text{C}(\text{CH}_2)_{10}\text{Ac}$ (I); final crystn. from EtOH gave the pure dicarboxylic acid, m. 123-4°. I m. 75-8°. Purification of the dicarboxylic acid can be effected by conversion to the di-Me ester by treating with MeOH- H_2SO_4 , 2-3 days at room temp., yielding 100% di-Me ester, m. 42.5-3.5°, b. 185-8°; saponification gave the pure acid, m. 122-3°. If the cleavage is run with less concd. KOH, the reaction yields as a main product 2,5-hexadecanedione. II. Preparation of 2,15-hexadecanedione. V. M. Rodionov, N. E. Kologrivova, E. A. Ogorodnikova, and V. N. Belov. *Ibid.* 1828-30.—The best results in prepn. of 2,15-hexadecanedione (I) were as follows: The condensation product of $(\text{CH}_2)_{10}\text{Br}$ with $\text{AcCH}_2\text{CO}_2\text{Et}$ (cf. preceding abstr.) and 10% aq. alc. KOH refluxed 1 hr. and cooled gave 71% I; after 2 crystns. from 1:1 aq. EtOH the product m. 85-6°; semicarbazone, m. 198-9°. Lower concn. of NaOH or the use of AcOH gave much poorer yields; heating the condensation product with H_2O 5 hrs. at 200° gave 62% I, but the product was contaminated with tarry by-products. G. M. Kozlov

OGORODNIKOVA, Ye.A.; SHEVYAKOVA, N.N.; SMOL'YANINOVA, Ye.K.; RODIONOV, V.M.,
akademik; BELOV, V.N.

Synthesis of heptadecanolide. Dokl.AN SSSR 90 no.4:553-556 Je '53.
(MLBA 6:5)

1. Akademiya Nauk SSSR (for Rodionov). 2. Vsesoyuznyy nauchno-issledova-
tel'skiy institut sinteticheskikh i natural'nykh dushistykh veshchestv.
(Heptadecanolide)

RODIONOV, V.M.; OGORODNIKOVA, Ye.A.; SEMVYAKOVA, N.N.; SHOL'YANINOVA, Ye.K.;
BELOV, V.N.

Intermediates in the synthesis of perfume substances. Report
No. 1: Synthesis of 1,14-tetradecanedioic acid. Trudy VNIISNDV
no.2:25-26 '54. (MLRA 10:7)
(Tetradecanedioic acid)

Synthesis of perfume substances
YEMEL'NOV, V.M.; SOLOV'YEVA, N.P.; SHOL'YANINOVA, Ye.K.; BELOV, V.Ye.;
KROKHIN, N.G.

Intermediates in the synthesis of perfume substances. Report
No. 5: Preparation 11-bromoundecanoic acids in a continuous
column apparatus. Trudy VNIISNDV no.2:32-33 '54. (MIRA 10:7)
(Undecanoic acid)

SMOL'YANINOVA, Ye. K.; SOLOV'YEVA, N.P.; SVADKOVSKAYA, G.E.; BELOV, V.B.

Synthesis of dihydroambrettolactone. Trudy VNIISNDV no.2:34-35
'54. (MLRA 10:7)

(Ambrettolic acid)

AUTHORS: Byelov, V. N.; Dayev, N. A.; Skvortsova, N. I.; Smol'yaninova, Ye. K.
(Moscow)

TITLE: Progress in Chemistry of Perfumes (Uspekhi khimii dushistykh veshchestv)

PERIODICAL: Uspekhi Khimii, 1957, Vol 26, Nr 1, pp 96-134 (U.S.S.R.)

ABSTRACT: A review is presented of various research work in the chemistry of perfumes and important semiproducts of their synthesis. The achievements of various Soviet and foreign researchers are listed. One group of Soviet chemists - Samokhvalov, Miropol'skaya, Vakulova, Preobrazhenskiy (10 - 12) have synthesized pseudoionone from methylheptenone through condensation with ester of gamma-bromocrotonic acid by means of the Reformatskiy reaction. The Lurie and Skvortsova team synthesized a number of ionone analogues with more complex side chain in the C₂ atom. B. A. Arbuzov and Mukhamedova (47-48) prepared isomers and ionone analogues with the methylene bridge in the cyclohexane ring and obtained analogous products through condensation with ketones for campholene aldehyde. A special section is devoted to the study of ambergris and the synthesis of perfumes with the scent of amber. Soviet chemists described the syntheses of three macrocyclic compounds: heptadecanolide from sebacic acid (75); dihydroambretolide from azelaic acid (76); and

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Progress in Chemistry of Perfumes

dihydro civetone from sebacic acid. Rodionov and associates published data on hydrobromination of undecylenic acid in a continuous action column (83). This group conducted catalytic hydrogenation of diesters and polyanhydrides of certain dibasic acids. The method of obtaining 14-methoxy-3-methyltetradecanoic acid which is an intermediate product in the synthesis of muscone was introduced in 1952 by Samokhvalov, Sibirtseva, Genkin and Preobrazhenskiy (96).

The contributions of other Soviet chemists - Dubinin-Kozhevnikova; Petrov and Sopov (126); Rodionov, Byelov, Ogorodnikova, Shevyakova; Skvortsov-Polyakova (149); Rodionov-Ogorodnikova-Moldovanska (148); Bryusova-Grigoryeva (150); Bryusova-Osipova-Gurevich-Lyuboshits (153); Byelov-Shepelenkova-Kologrivova (154); Machinskaya-Tokarev (155) - in this field of organic chemistry are listed. The names of French, USA, Swiss, and other foreign chemists and their particular accomplishments are not given in the abstract.

As is evident from the review, the last 5 years (1950-1954) have experienced great advances in the chemistry of perfumes. The authors

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SMOL'YANINA V. E. K.

Distr: 4E43

Preparation of ω -hydroxypentadecanoic acid by the method of cross electrolytic condensation. 1. Electrocondensation of ω -acetoxyundecanoic acid and monoethyl ester of adipic acid. G. E. Svadkovskaya, S. A. Veltkezh, E. K. Smol'yanina, and V. N. Belov. *Zhur. Obshchei Khim.* 27, 2146-52(1957). Electrolysis of 1:1 to 1:5 mixts. of ω -acetoxyundecanoic acid and $\text{Et}_2\text{OC}(\text{CH}_2)_4\text{CO}_2\text{H}$ for synthesis of ω -hydroxypentadecanoic acid was studied. The app. was either a cell provided with a cooling jacket, using a Pt anode with the steel walls of the cell acting as the cathode, or a smaller cell of flat rectangular shape, also using a Pt anode, with a circulating pump passing the electrolyte continuously through the app. The best conditions which produce 25-7% yield were detd. The best results are obtained with 1:5 molar ratio of the components, at 25-38 amp./sq. dm. c.d. at the anode, with partial neutralization of the starting materials with KOH or NaOH, using 0.875 moles base/mole acid mixt.; best voltage for the continuous cell was 10-12 v., with 8.3 moles H_2O /mole acid mixt., the operating temp. being 40-80°. Na salts gave 3-5% lower yields than the K salts. Electrolysis of the free acids gives but 7% yield of the desired product. The crude product was isolated by distn., b. 174-220°, and was sapond. to ω -hydroxypentadecanoic acid with 10% alc. KOH; after acidification the free acid, m. 85-85.5°.

G. M. Kosolapoff

SMOL'YANINOVA, Ye. K.
 AUTHORS: *Smol'yaniyeva, Ye. K.*
 Solov'yeva, G. P.,
 Belov, V. N.

75-11-23/56

TITLE: Investigation of the Condensation Products of the Undecylenic Acid with Formaldehyde (Issledovaniye produktov kondensatsii undetsilenovoy kisloty s formal'degidom).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 3015-3021 (USSR)

ABSTRACT: In search of a convenient synthesis of 12-oxydodecanic acid the authors succeeded in performing the condensation of undecylenic acid with formaldehyde and in investigating some conversions of the compounds forming in this reaction. A similar condensation of formaldehyde with unsaturated acids has formerly only been described in two papers without mentioning the undecylenic acid. The present condensation was carried out by the authors in the presence of H₂SO₄ during six hours at 80-85°C. The following end products were determined: 4-(ω-carbonooctyl)-1,3-dioxane; 4-(ω-carbonooctyl)-1,3-dioxane; 3-(ω-carboxyheptyl)-4-oxytetrahydropyran; 3-(ω-carbonooctyl)-4-oxytetrahydropyran and a small quantity of 10-oxydodecanic acid. It was also shown that these compounds partially manifest themselves

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Investigation of the Condensation Products of the
Undecylenic Acid With Formaldehyde

73-11-23/56

in the form of methyl ester. The structure of 4-(ω -carbo-
methoxyoctyl)-1,3-dioxane and 3-(ω -carbo-
methoxyheptyl)-4-
oxytetrahydrofuran was confirmed by a number of conversions.
4-(ω -carbo-
methoxyoctyl)-1,3-dioxane can over a number of
stages be converted to 12-oxododecanoic acid (about 10%).
There are 6 references, 3 of which are Slavic.

ASSOCIATION: All-Union Scientific Research Institute of Synthetic and Natural
Aromatic Substances (Vsesoyuznyy nauchno-issledovatel'skiy
institut sinteticheskikh i natural'nykh dushistykh veshchestv).

SUBMITTED: November 1, 1956

AVAILABLE: Library of Congress

1. Undecylenic acids - Condensation reactions
2. Formaldehyde - Condensation reactions

Card 2/2

BELOV, V.; SMOL'YANINOVA, Ye.K.; OGORODNIKOVA, Ye.A.; RODIONOV, V.M.;
SOLOV'YEVA, N.P.; SVADKOVSKAYA, G.E.; SHEVYAKOVA, N.N.

Synthesis of macrocyclic lactones. Trudy VNIISMDV no.4:3-22
' 58. (MIRA 12:5)

(Lactones)

SOLOV'YEVA, N.P.; SMOL'YANINOVA, Ye.K.; BELOV, V.N.

Intermediate products of the synthesis of odorous substances.
Report No.6: Production of ω -oxyacids by the dehydrogenation
of diols. Trudy VNIISNDV no.4:22-25 '58. (MIRA 12:5)
(Dehydrogenation) (Acids, Organic) (Glycols)

SOV/79-28-8-57/66

AUTHORS: Svadkovskaya, G. E., Smol'yaninova, Ye. K., Belov, V. N.

TITLE: Synthesis of the ω -Oxypentadecanic Acids by the Method of "Intersecting" Electrolytic Condensation. II (Polucheniye ω -oksipentadekanovoy kisloty metodom "perekrestnoy" elektroliticheskoy kondensatsii. II)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 8, pp. 2268-2273 (USSR)

ABSTRACT: In this report the authors describe the conditions under which the electrolytic condensation of the ω -acetoxyundecanic acids with the monomethyl ester of adipic acid takes place. These conditions give a 25-27% yield of oxypentadecanic acid. When a large number of electrolysis products have been obtained an exact investigation of other compounds arising in these reactions can be undertaken. As is known, the Kolbe (Kol'be) synthesis is accompanied by a number of side reactions, whose nature depend on the experimental conditions. The synthetic products were investigated which formed in the "intersecting" (perekrestnaya) electrolytic condensation, modified after Kolbe. This mixture contained the ethyl ester of ω -acetoxyundecanic

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SOV/79-28-8-57/66

Synthesis of the ω -Oxypentadecanic Acids by the Method of "Intersecting"
Electrolytic Condensation. II

acid (16%), the diethyl ester of sebacic acid (18%), the acetate of eicosandiol (10%), the ethyl ester of pentanic acid (2%), the ethyl ester of pentenic acid (2%), the acetate of decyl alcohol (3-4%), the acetate of decene alcohol (3-4%), the acetate of decandiol (about 0,5%), the diethyl ester of adipic acid (3%), adipic acid (7%), the monoethyl ester of this acid (3%), and ω -acetoxyundecanic acid (below 1%). It was shown that the formation of separate compounds can be explained on the basis of their common assumed behavior according to the mechanism of the Kolbe reaction. There are 25 references, 7 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh i natural'nykh dushistykh veshchestv (All-Union Scientific Research Institute for Synthetic and Natural Aromatic Materials)

SUBMITTED: June 24, 1957

Card 2/3

SOV/79-26-8-57/66

Synthesis of the ω -Oxyptadecanic Acids by the Method of "Intersecting"
Electrolytic Condensation. II

Card 3/3

NESMEYANOV, A.N., akademik; FREYDLINA, R.Kh.; BELOV, V.N., prof.; KARAPETYAN, Sh.A.; SMOL'YANINOVA, Ye.K.; SOLOV'YEVA, N.P.; OGORODNIKOVA, Ye.A.; VASIL'YEVA, Ye.I.; ZAKHARKIN, L.I.; SHEVYAKOVA, N.N.

Synthesis of macrocyclic lactones and oxalactones based on ethylene and carbon tetrachloride. Zhur. VKHO 5 no.4:371-376 '60.
(MIRA 13:12)

1. Chlen-korrespondent Akademii nauk SSSR (for Freydlina).
(Lactones)

SVADKOVSKAYA, G.E.; SOLOV'YEVA, N.P.; SMOL'YANINOVA, Ye.K.; BELOV, V.N.;
VOYTKEVICH, S.A.

Preparation of 16-hydroxyhexadecanoic acid by the "cross" electro-
condensation method. Part 3: Electrocondensation of monoesters of
azelaic acid with acyl derivatives of 9-hydroxynonanoic acid.
Zhur.ob.khim. 31 no.9:2877-2879 S '61. (MIRA 14:9)
(Azelaic acid) (Nonanoic acid)

PETTENKO, L.P.; SMOL'YANINOVA, Yu.L.

Reaction of 2-butene with benzoyl chloride. *Zhur.ob.khim.* 33
no.6:2041-2042 Je '63. (MIRA 1647)
(Butene) (Benzoyl chloride)

L 36711-65 EPF(c)/EWP(j)/EWT(m) Pc-l/Pr-l RM

S/0080/65/038/001/0170/0173

ACCESSION NR: AP5003122

AUTHOR: Kostsova, A. G.; Smol'yaninova, Yu. L.; Shatalov, V. P.; Kovrizhko, L. F.

TITLE: Synthesis of technical dodecylmercaptan

26
24
B

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 1, 1965, 170-173

TOPIC TAGS: technical dodecylmercaptan, synthesis, synthetic rubber, polymerization regulator

ABSTRACT: Technical dodecylmercaptan was synthesized from higher alcohols obtained by oxidation of paraffins at the Shebekinsk Chemical Co. of Synthetic Fatty Acids. (Shebekinskoye khimicheskoye kombinat sinteticheskikh zherny*kh kislot). A wide fraction of alcohols (C₉-C₁₀-C₁₂-C₁₃-C₁₄) and a narrow fraction (C₁₀-C₁₂-C₁₃), obtained by vacuum distillation of the former, was used. The alcohols were brominated or chlorinated (HBr, or gaseous HCl) to the haloalkyls which were then reacted with H₂S in an alcoholic solution of KOH. The resultant

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L 36711-05

ACCESSION NR: AP5003122

2

mixtures of mercaptans, predominantly dodecylmercaptan, were designated technical dodecylmercaptan. The narrow fraction gave a better product. Preliminary tests with the technical dodecylmercaptan indicated it was a good polymerization regulator for synthetic rubber. Orig. art. has: 4 tables

ASSOCIATION: Voronezhskiy gosudarstvenny*y universitet (Voronezh State University)

SUBMITTED: 26Dec62

ENCL: 00

SUB CODE: GC, MT

NR REF SOV: 003

OTHER: 008

Card 2/2

SMOL'YANINOVA, Z.Ya.

Scientific and technical conference on the production of condenser paper. Bum.1 der.prom. no.4:55 O-D '62. (MIRA 15:12)
(Paper)

PROCESSES AND PROPERTIES INDEX

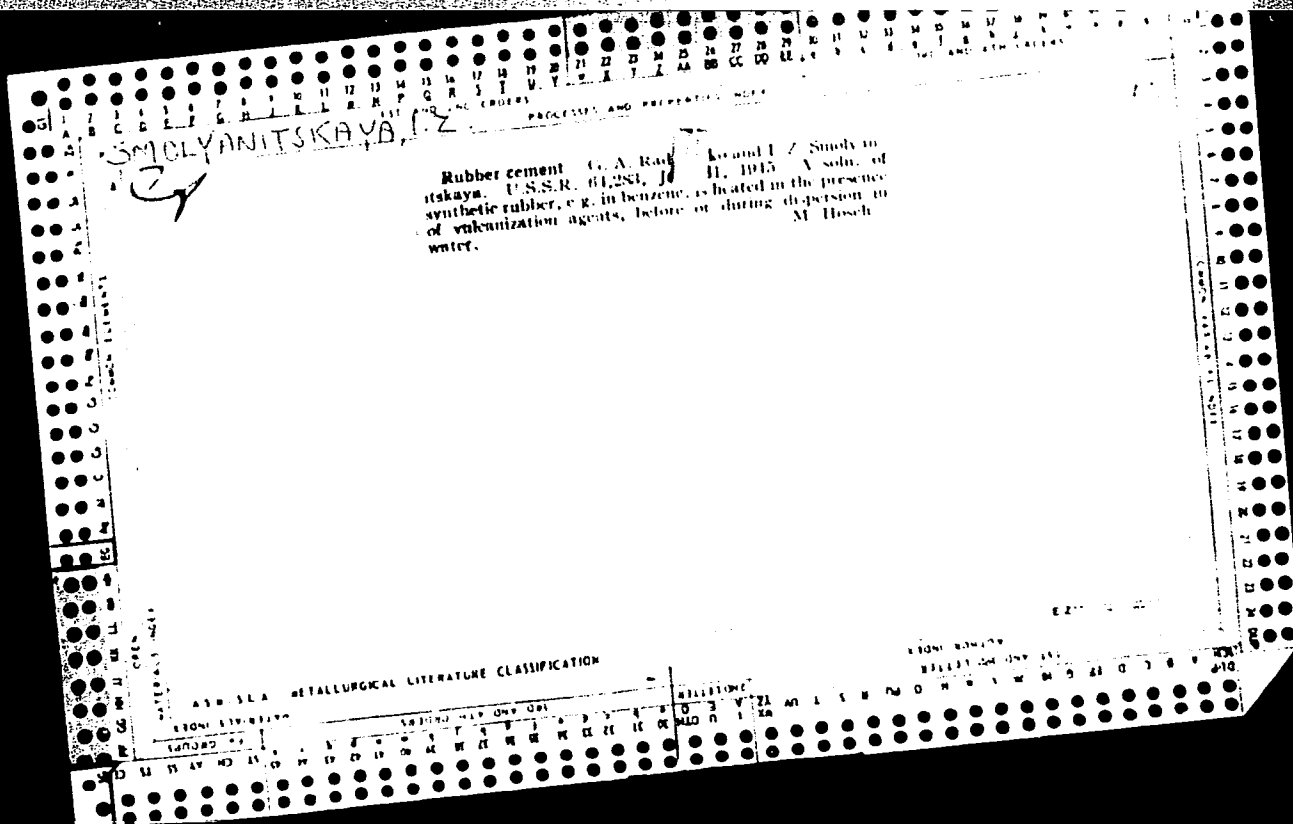
6-3

Diaryls and their derivatives. VI. Oxidation of β -naphthol-3-carboxylic acid. VII. Oxidation of 2-hydroxyanthracene. I. S. Jorva (J. Gen. Chem. Russ., 1935, 5, 1205—1209, 1210—1212).—VI [with I. Z. SMOLJANITSEVA]. β -Naphthol-3-carboxylic acid (I) in boiling H_2O or aq. NaOH and excess

of $FeCl_3$ yield chiefly 2:2'-dihydroxy-1:1'-dinaphthyl-3:3'-dicarboxylic acid (II), together with some 1-chloro- β -naphthol-3-carboxylic acid, which is the chief product when the reaction mixture is acid. (I) and CuO in $PhNO_2$ (210—220°; 6 hr.) yield (II), which is converted into dinaphthylene dioxide by more prolonged treatment with CuO at 300°. (II) is not further oxidized by $FeCl_3$. The Pb salt of (II) undergoes a perylene condensation when heated with $AlCl_3$ (160°; 1 hr.) to yield an acid orange dye, probably 1:12-dihydroxyperylene-2-carboxylic acid, m.p. > 330°, converted into the quinone by CrO_3 , and into perylene by distillation from Zn dust.

VII. 2-Hydroxyanthracene in boiling AcOH and conc. aq. $FeCl_3$ yield 2-hydroxy-1:1':9:2'-dianthrillene oxide (Ac derivative, m.p. 247—250°), converted at > 300° into an unidentified product (probably the dioxide). R T.

METALLURGICAL LITERATURE CLASSIFICATION



SMOLYANITSKAYA, I.Z.

Design of barrels made from hard fiber materials and the technology
of their manufacture. Trudy Nilitary no.2:51-70 '58.

(MIRA 13:12)

(Coopers and cooperage)

SMOLYANITSKIY, Boris Zinov'yevich; AYZENSHTADT, Mikhail Grigor'yevich

[Vologda Economic Region in the seven-year plan] Vologodskii
ekonomicheskii raion v semiletke. Vologda, Vologodskoe
knizhnoe izd-vo, 1960. 57 p. (MIRA 14:2)
(Vologda Economic Region--Industries)

BARANOV, Nikolay Aleksandrovich; MALYSHEV, K.N., retsenzent;
SMOLYANITSKIY, B.Z., red.; KHOTKOVA, Ye.S., red.izd-va;
KARLOVA, G.L., tekhn. red.

[Manual for the operator of acid preparation plants in
sulfite pulp mills] Posobie kislotchiku sul'fitno-
tselliuloznogo proizvodstva. Moskva, Goslesbumizdat,
1963. 155 p. (MIRA 16:10)
(Woodpulp industry)

BARANOV, Nikolay Aleksandrovich; MELNIKOV, S.F., Gorny antisisticheskogo truda, repressant; SEMDIUKOV, M.P., inzh., repressant; SMOLYANITSKIY, B.Z., otv. red.

[Technology of woodpulp and cellulose] Tekhnologiya drevesnoi massy i tsellulozy. Moskva, Lesnaya promyshlennost', 1965. (MIRA 18:3)
354 p.

DZIGORA, I.S.; SMOLYANITSKIY, D.L.

Record for mining coal using the IK-52m cutter-loader. Ugol' 39
no.12:1-5 D '64. (MIRA 18:2)

1. Trest Kuybyshevugol'.

KOZHEVNIKOV, S. N. [Kozhevnykov, S. M.] (Dnepropetrovsk); PRAZDNIKOV,
A. V. [Prazdnykov, A. V.] (Dnepropetrovsk); SMOLYANITSKIY, E. A.
[Smolianyts'kiy, E. A.] (Dnepropetrovsk)

New manipulation mechanism for an automatic blooming mill.
Prykl. mekh. 9 no.1:86-93 '63. (MIRA 16:4)

1. Dnepropetrovskiy institut chernoy metallurgii.

(Rolling mills)

L 2693-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) IJP(c) BC

ACCESSION NR: AT5022816

UR/3165/65/000/001/0094/0102

40
B+1

AUTHOR: Kozhevnikov, S. N. (Corresponding member AN UkrSSR); Prazdnikov, A. V.
(Candidate of technical sciences); Smolyanitskiy, E. A.

TITLE: Selection of optimal parameters for a high-speed throttle servo control
mechanism with an electronic model 9

SOURCE: Ukraine. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.
Gidravlicheskiye mashiny i gidroprivod, no. 1, 1965. Issledovaniye gidravli-
cheskikh ustroystv i sistem (Investigation of hydraulic devices and systems),
94-102

TOPIC TAGS: servomechanism, optimal control, mathematic model, machine tool

ABSTRACT: The present paper considers the problem of utilizing a servo throttle
hydraulic drive with rigid negative feedback, operating on water, and using
remote manual or automatic control for the mechanisms of heavy high-speed ma-
chines. The drive should be capable of performing the following functions:
a) Operate the mechanisms controlled by it in a broad range of speed; in this
case, the maximum speed may reach one or several meters per second. b) Assure
the braking of the moving parts of the mechanism within the limits specified by

Card 1/2

L 2693-66
ACCESSION NR: AT5022816

the conditions of endurance and durability of the mechanism. c) Carry out the prescribed displacement of the piston to an accuracy of from one to several millimeters. d) Assure the stability of the system along the entire range of changing speeds. The data obtained from processing the oscillograms obtained and, therefore, a good approximation of the electronic and the physical models, processes in the high-speed servo drive. It is shown that with the parameters selected, the maximum pressures arising in the cylinder cavities during braking exceed their rated values only slightly. Orig. art. has: 5 figures, 1 table, and 7 formulas.

ASSOCIATION: none

SUBMITTED: 00

NO REF SOV: 000

ENCL: 00

SUB CODE: IE

OTHER: 000

KC
2/2

Using an algorithmic model in selecting optimal parameters of a
high-speed mechanism with a throttle servomechanism. Gier.
Inst. Engng. no. 1-92-1 2 166. (MIRA 18:12)

1. Izopredpriyevskiy institut chernoy metallurgii.
2. Uchebno-nauchnyy tsentr AN UzbSSR (for Koshchevnikov).

SMOLYANITSKIY, M.Kh.

Universal mass production caramel line. Ref. nauch. rab. VKNII no.1:
31-36 '57. (MIRA 11:3)
(Confectionary--Equipment and supplies) (Caramel)

BRONSHTEYN, I.I.; SMOLYANITSKIY, M.Kh.
BRONSHTEYN, I.I.; SMOLYANITSKIY, M.Kh.

Automatic unloading of caramel from coil-type vacuum cookers. Ref.
nauch. rab. VKNII no.1:39-43 '57. (MIRA 11:3)
(Caramel)

SMOLYANITSKIY, M. Kh.

Continuous mechanized production line for wrapped candy caramel.
Trudy VKMII no.14:59-65 '59. (MIRA 14:5)
(Caramel)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

16

CA

Preserving malt. S. B. Gorteev, M. B. Smolyantseva, A. L. Sokolovskii, and L. B. Solonovskii. U.S.S.R. 06,640, July 31, 1940. Fresh malt of any grain is ground together with the sprouts. It is then combined with a powder, comestible, e.g., natural or roasted flour, powder, sugar, or the like, taken in such quantity that the final mixt. contains not over 20-22% moisture. The product keeps well and can be briquetted. M. Hosen

COMMON ELEMENTS

MATERIALS INDEX

OPEN

COMMON VARIABLES INDEX

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

TECHN NOMIN

INT AND LETT

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

SMOLYANITSKIY, M. Ye.

SOKOLOVSKIY, A.L., professor; SMOLYANITSKIY, M. Ye., nauchnyy sotrudnik;
AUNINA, O.V., nauchnyy sotrudnik; SHKLOVSKAYA, A. Ye., nauchnyy
sotrudnik; GREYSER, R. Ya., nauchnyy sotrudnik.

Continuous mechanized production of caramel. Trudy VKNII no.9:3-48
'54. (MLRA 7:8)

(Confectionery) (Pastry)

SMOLYANITSKIY, M.Ye.; SOKOLOVSKIY, A.I.

Development and operation of continuous caramel production lines.
Khleb.i kond.prom. 1 no.7:14-18 J1 '57. (MLRA 10:7)

1. Vsesoyuznyy konditerskiy nauchno-issledovatel'skiy institut.
(Caramel) (Confectionery--Equipment and supplies)

AVDEYEVA, A.V., doktor tekhn.nauk; ALEKHIN, S.F., inzh.; ALTUNDZHI, K.S., inzh.; BRONSHTEYN, I.I., kand.khim.nauk; BRUSHTEYN, M.S.; GRIGOR'YEV, F.B., inzh.; ZHELEZNOVA, V.V., inzh.; ISTOMINA, M.M., kand.tekhn.nauk; KOZLOV, S.A., inzh.; KOLESNIKOVA, V.K., inzh.; KOCHETKOV, I.A., inzh.; LUNIN, O.G., kand.tekhn.nauk; MANNINA, T.A., inzh.; SEREBRYAKOV, M.N., inzh.; ~~SMOLYANITSKIY, M.Ye.~~, inzh.; TYURIN, A.I., kand.tekhn.nauk; TSYBUL'SKIY, A.A., inzh.; CHERNOIVANNIK, A.Ye., inzh.; SHKLOVSKAYA, A.Ye., inzh.; BEN', G.M., inzh., retsenzent; MARSHALKIN, G.A., kand.tekhn.nauk, retsenzent; GUSAKOV, A.I., red.; MARTYNOV, M.I., kand.tekhn.nauk, red.; KRUGLOVA, G.I., red.; KISINA, Ye.I., tekhn.red.

[Confectioner's manual] Spravochnik konditera. Pod obshchei red. M.I. Martynova. Moskva, Pishchepromizdat. Pt.2.[Technological equipment of the confectionery industry] Tekhnologicheskoe oborudovanie konditerskogo proizvodstva. 1960. 630 p. (MIRA 14:3)

(Confectionery--Equipment and supplies)

LUNIN, Oleg Grigor'yevich, kand.tekhn.nauk; SMOLYANITSKIY, Moisey
Yefimovich, inzh.; GUSAKOV, A.I., inzh., retsenzent;
KRUGLOVA, G.I., red.; KISINA, Ye.I., tekhn.red.

[Continuous production lines for confectioneries] Potochnye
linii proizvodstva konditerskikh izdelii. Moskva, Pishcheprom-
izdat, 1961. 160 p. (MIRA 14:6)
(Confectionery)

SMOLYANITSKIY, M.Ye.

[Mechanized continuous line for the production of cast
toffee-type candy] Mekhanizirovannaia potochnaia liniia
proizvodstva litogo irisa. Moskva, TSentr. in-t nauchno-
tekhn. informatsii pishchevoi promyshl., 1964. 10 p.
(MIRA 18:5)

SMOLYANITSKIY, Solomon Vladimirovich; LANINA, L.I., red.; RAKITIN, I.T. ,
tekh. red.

[Listen, life!] Slushai, zhizn'! Moskva, Izd-vo "Znanie," 1961.
46 p. (Vsesoiuznoe obshchestvo po rasprostraneniuiu politiche-
skikh i nauchnykh znanii. Ser.10, Molodezhnaia, no.24)
(MIRA 15:1)

(Construction workers)

GRINBERG, A.Ye.; CHERTKOVA, V.F.; SMOLYANITSKIY, V.Z.; MAKEYEVA, A.R.;
RUMYANTSEVA, N.P.

Using benzoates to protect rubber mixtures from scorching; report
no.1. Kauch. i rez. 18 no.1:22-27 Ja '59. (MIRA 12:1)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh
izdeliy.
(Vulcanization) (Benzoic acid)

EYDEL'NANT, N.L.; RUBINA, S.I.; SMOLYANITSKIY, V.Z.; SEREBRYAKOVA, V.L.;
PLUNGIAN, L.V.; DASHKEVICH, V.S.; Primali uchastiye:
PESCHANSKAYA, R.Ya.; LEVINA, A.Yu.; GOL'DBREYKH, I.Ye.;
SHCHERBAKOVA, L.P.; PAPULOVA, P.A.

Activated kailin and its use in rubber compounding. Kauch.
i rez. 20 no.9:46-49 S '61. (MIRA 15:2)

1. Nauchno-issledovatel'skiy institut rezi novykh i lateksnykh
izdeliy, Vsesoyuznyy nauchno-issledovatel'skiy institut plenochnykh
materialov i iskusstvennoy kozhi i zavod "Sangigiyena".

(Kaolin)

(Rubber, Synthetic)

BRUCHANIKAYA, N.Ya.; BIDA, N.D.; KALININ, V.I.; OBRASHENOVICH, A.I.;
STEFANOVICH, V.V.; GABRIYAKH, I.Ye.; MEYSEYeva, N.A.; TIKHONOVA, Z.I.

Use of triethylbenzyl pyridinium salt as vulcanization
accelerator of rubber compounds. Kautsch. i rez. 24 no.10:1957
165. (N°8 18.10)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateknykh
izdeliy i Zavod "Krasnyy treugol'nik".

SMOLYANITSKIY, V.Z.; KHEYFETS, A.A.

Paints for rubber goods. Kauch. i rez. 24 no.10:43-44 '65.
(MIPA 18:10)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh
izdeliy.

L 22246-66 EWP(j)/EWT(m) IJP(c) RM
ACC NR: AP6006493

SOURCE CODE: UR/0138/65/000/010/0027/0029

AUTHOR: Peschanskaya, R. Ya.; Eydel'nant, N. L.; Smolyanitskiy, V. Z.; Gershenovich, A. I.; Stefanovich, V. V.; Gal'braykh, I. Ye.; Alekseyeva, N. A.; Tikhonova, Zh. I.

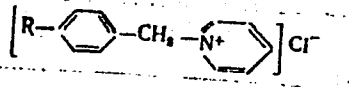
ORG: Scientific-Research Institute of Rubber and Latex Products (Nauchno-issledovatel'skiy Institut rezinovykh i lateksnykh izdeliy); "Red Triangle" Plant (zavod "Krasnyy treugol'nik")

TITLE: The use of p-alkylbenzylpyridinium chloride as a vulcanization catalyst for rubber mixtures

SOURCE: Kauchuk i rezina, no. 10, 1965, 27-29

TOPIC TAGS: vulcanization, catalyst, butadiene styrene rubber, synthetic rubber, rubber chemical

ABSTRACT: A cationactive pyridinium compound, p-alkylbenzylpyridinium chloride (katapin):



(1)

where R is an aliphatic radical containing 12-14 carbon atoms, was studied as a vulcanization catalyst. Katapin is a water-soluble dark-brown paste, now being produced on a semi-industrial basis. When large-scale industrial production is organized, katapin production costs will be close to those of captax, the least expensive vulcanization catalyst. Katapin is found to

Card 1/2

UDC: 678.044.004.14

ACC NR: AP7000350

SOURCE CODE: UR/0413/66/000/022/0115/0116

INVENTOR: Goron, I. Ye.; Baranov, Yu. A.; Dembinskiy, V. F.; Merkin, I. Kh.;
Pankov, G. A.; Penchuk, N. V.; Smolyanitskiy, V. Z.; Volkov, Yu. D.

ORG: none

TITLE: Electromagnetic flaw detector. Class 42, No. 188737

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 115-116

TOPIC TAGS: ~~flaw detector, magnetic flux detector, magnetic field~~
~~electromagnetic device~~ *flaw detection, electro-measuring device,*

ABSTRACT: This Author Certificate introduces an electromagnetic flaw detector containing 1) a primary magnetic flux conductor for magnetizing the inspected article, 2) a secondary magnetic flux conductor for duplicating the magnetic field configuration of the article surface, 3) generators with alternating magnetic field ensuring hysteresis-free transfer of the magnetic field configuration, and 4) magnetic recording heads. To inspect shaped articles, the conductor is clamped to the article with elastic rings stretched over the article. To maintain its cylindrical shape, the secondary conductor is enclosed in a vacuum shell. Orig. art. has: 1 figure.

SUB CODE: 14.07/SUBM DATE: 11Aug65/

UDC: 620.179.14.08

Card 1/1

PROCESSES AND PROPERTIES INDEX

7

A Formula for the Rapid Determination of the Amount of Ore Added for the Regulation of the Bessemer Process. Ya. Smolyanitskiy. (Stal, 1937, No. 9, pp. 25-27). (In Russian). At one large Russian works the method adopted to control the temperature in the Bessemer process was to add iron ore to the converter. It is claimed that the addition of ore while the blast is on accelerates the burning away of impurities, which results in a shortening by about 30% of the time required for the blast, and a reduction in the amount of iron oxidised. An increased output capacity and reduced production costs are also obtained. This practice has no deleterious effect on the quality of the metal and enables one to utilise pig iron with silicon contents up to 2-3%. The ore added had the composition: Fe₂O₃ 91.0%, SiO₂ 5.0%, Al₂O₃ 1.5%, MnO 0.26%, CaO 0.30%, MgO 0.10%, and H₂O 1.0%. From a consideration of the chemical reactions taking place on the addition of the ore and the effect of the addition on the heat balance, the author derives the following formula for the percentage amount of ore required:

$$A = 7(Si - 1.25) + 0.5(Mn - 1.00) + 0.3(C - 3.8) + \frac{3(T - 1200)}{100}$$

where *Si*, *Mn*, and *C* stand for the silicon, manganese, and carbon contents of the metal in the converter and *T* its temperature on the centigrade scale.

METALLURGICAL LITERATURE CLASSIFICATION

627

PROCESSES AND PROPERTIES INDEX

4

Treatment of Pig Iron with Flue Dust. Ya. Smolyanitskiy and A. Smolyanitskiy. (Stal, 1938, No. 4, pp. 11-17). (In Russian). A series of full-scale experiments described in the present paper has shown that both manganese and silicon can be reduced by treating the pig iron with flue dust; 4-5% by weight of flue dust was shovelled on to the stream of pig iron flowing from the blast furnace. This treatment was found to reduce the silicon content by 20.7-54.0%, the absolute reduction of the manganese being on the average 0.48% and that of the carbon 0.39%. Addition of the flue dust also proved beneficial from the point of view of desulphurising the iron, up to 35.6% reduction in the sulphur content being obtained. Finally the yield of pig iron was increased by 2.55%. In turn, the improved quality of the pig iron resulted in an increase of 15% in the output capacity of the open-hearth furnace. The treatment with flue dust does not reduce the temperature of the pig iron. The article contains much of the data collected during some of the experiments.

METALLURGICAL LITERATURE CLASSIFICATION

BELLSTONE

B-I-5

BC

Improved mould for reception of samples of cast iron. A. A. SMOLETSKI (Zavod. Lab., 1938, 7, 853).—A partition with an aperture at the bottom separates the mould into two parts. Molten Fe is poured into the smaller part, whence it flows into the larger, the ingot formed in which does not have a slag pellicle. R. T.

PROCESSES AND PROPERTIES INDEX

ASB-104 METALLURGICAL LITERATURE CLASSIFICATION

REGION		SUBJECT										MATERIALS																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

PROCESSED AND PREPARED BY

Effect of cupola slag on the structure and properties of cast iron. Ya. A. Smolyantski. *Lutskoe Delo* 1940, No. 7, 13-10. The content of SiO₂, Al₂O₃, P₂O₅, and S in slag was the same in all heats with different fluxes such as limestone, open-hearth slag, dolomite and their combinations. The effect of these fluxes was greater on MgO and CaO content than on FeO and MnO. Best structure and mech. properties were shown by cast Fe prepd. with fluxes of (1) open-hearth slag and dolomite and (2) limestone and dolomite. Limestone alone produced coarse graphite structure and low mech. properties. Open-hearth slag was better than limestone in producing good mech. properties, yield and graphite structure. No relation was found between chem. compn. and fluidity of slag or between fluidity of slag and the mech. properties of the cast Fe. However, the cast Fe with coarsest graphite inclusions and lowest mech. properties were obtained with slags of lowest fluidity.

B. Z. Kamich

ASTM A5.1 METALLURGICAL LITERATURE CLASSIFICATION

17

16

Viscosity Control of Cupola Slags, Ya. A. Smolyanskiy, Henry Bratcher (Altadena, Calif.), Translation. No. 2112, 1948, 4 pages. From *Zavodskaya Laboratoriya* (Factory Laboratory), v. 14, no. 2, 1948, p. 214-215.

Gives data on a proposed rectangular-block viscosimeter (figure gives design and tentative dimensions) for the above; also gives results obtained with it. Advantages of proposed viscosimeter: simplicity, low cost, and high accuracy. Time required for one viscosity determination: less than one minute. 3 ref.

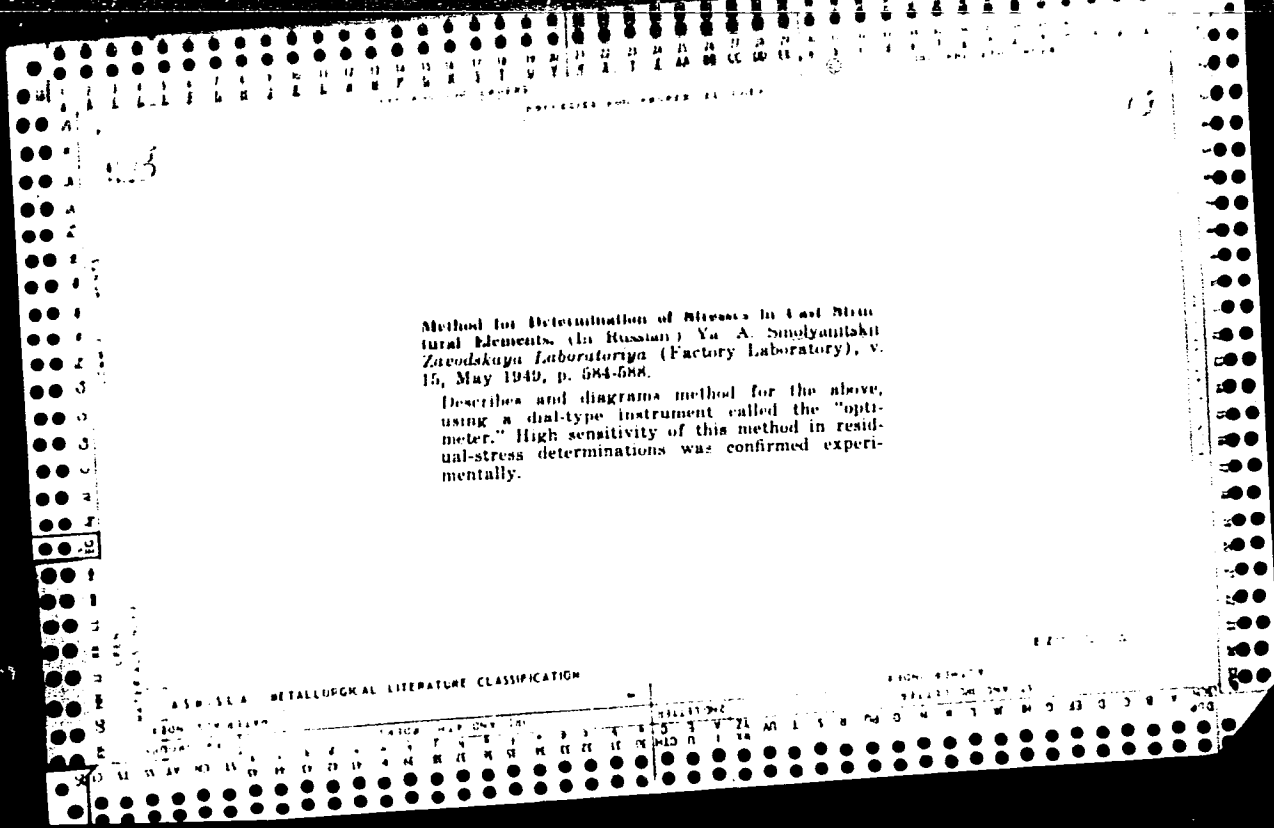
ASME-ISA METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SMOLYANICHNIK, YA. ..

Smolyanitskii, Ya. A., Arsen, V. D. and Baranova, V. V. "The effect of the composition of the charge and of the pig iron on the durability of the open-hearth furnace walls," Trudy Stalinskogo V.M. Inst-za VENTOM, No 1, 1949, p. 107-117
- Miller: 41008

SU: J-2211, 17 Dec 1943, (Letopis 'Shturnal' Ughin States, 26. 1943)



SMOLYANITSKIY, Ya. A.
B.S. lecturer

The Relieving of pressures in the cast construction by means of local inductive heating.

Vest Mash p. 55 Oct 51

SMOLYANTSKIY, Ya. A., Engr.

USSR/Metals - Steel, Heat Treatment

Jan 52

"Normalization of Steel Castings With Simultaneous Accelerated Tempering," Ya. A. Smolyanitskiy, Engr, Donets Industrial Inst imeni Khrushchev

"Litey Proizvod" No 1, pp 2-4

Describes expts to establish new heat treating process for shaped castings of medium carbon steels. Accelerated tempering satisfactorily relieves thermal stresses imposed by previous normalization. Entire process takes 7 hours, up to removal of castings from furnace for final cooling, vs 14-18 hrs required for annealing.

204T67

SMOLYANITSKIY, Ya.A.

Rapid methods of applying heat treatment to steel. Lit, proizv. no. 7:30-31
Jl '53. (MLRA 6:7)

(Steel--Heat treatment)

BRAYNIN, I.Ye., professor; SMOLYANITSKIY, Ya.A., dotsent; BUDINSHTEYN,
R.I., inzhener.

Effect of mixture ratio on the durability of casting molds. Stal'15
no.1:79-81 Ja '55. (MLRA 8:5)

1. Donetskii industrial'nyy institut.
(Iron founding)

SMOLYANITSKIY, Ya. A.

Smolyanitskiy, Ya. A.

Testing the Dynamic Strength of Mould Mixtures. Ya. A. Smolyanitskii. (*Zavodskaya Laboratoriya*, 1955, 21, (10), 1236-1237). [In Russian]. In the apparatus described a formed green sample of mould mixture is placed on a horizontal surface which is repeatedly raised and allowed to fall through a distance of 20 mm. The index of dynamic strength is taken to be the arithmetic mean of the number of impacts between the appearance of the first crack and its passage over the whole upper surface. Results obtained show the effect of moisture on the dynamic strength of similarly and differently compacted samples. Deviations from the mean did not exceed 10%.—s. r.

Donetsk Inst. Inst. in. N.S. Khrushchev

AUTHOR

Smolyanitskiy, Ya. A.

SOV-178 48-8 9/21

TITLE

Methods for Reducing Thermal Stresses in Cast Constructions During Casting into the Raw Mold (Puti umen sheniya termicheskikh napryazheniy v litykh konstruktsiyakh pri otlivke v syruyu formu)

PERIODICAL

Liteynoye proizvodstvo, 1958. Nr 8, pp 16-18 (USSR)

ABSTRACT

Thermal stresses in casts increase with the speed of cooling in the mold. This speed depends on the size of the mold, the temperature of the metal, and the thermo-physical properties of the mold material. The moisture content of the molds also exerts a considerable influence, especially in thin-walled molds. The influence of the moisture content has been studied on small molds of 1.4 kg (Figure 1). The heat conductivity of the mold mixture increases with the moisture content. In Figures 2 and 3, the results of tests of compression and gas permeability in molds with different moisture content and density are shown. At a moisture content of 5-35%, and a density caused by 2-3 blows of the ram, the compression resistance is 0.67 kg/cm², the gas per-

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SOV-128-58-8-9/21
Methods for Reducing Thermal Stresses in Cast Constructions During Casting
into the Raw Mold

meability 70, and the elastic deformations 0.234 mm.
A decrease in moisture content increases the technological
qualities of the mold materials. There are 3 graphs,
1 table, 1 diagram, and 8 Soviet references.

1. Metal castings--Stresses 2. Thermal stresses--Analysis

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25(1)

SOV/148-59-2-15/24

AUTHORS: Smolyanitskiy, Ya.A., Candidate of Technical Sciences, Docent, and Kapliy, N.I., Engineer

TITLE: Plastic Deformations in Mechanical Retardation of Metal Shrinkage (Plasticheskiye deformatsii pri mekhanicheskom tormozhenii usadki metalla)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1959, Nr 2, pp 111-116 (USSR)

ABSTRACT: Information is given on the dependence of plastic deformation on mechanical retardation of metal shrinkage at different temperatures. Investigations of shrinkage retarded by a constant load were carried out on a device shown in Figure 1 and with the use of silumin as starting material. It was proved that the mechanical brake action caused retarded linear shrinkage due to elastic-plastic deformations. These deformations developed within 140 seconds in two stages: intensive formation and subsequent attenuation. Their temperature range was from 584°C at the beginning and 350-330°C at the end. Increased shrinkage retardation extended the stage of intensive development and speeded-up the deformation rate. These factors reduced the actual shrinkage values. The effect of the retardation stress on the temperature range of plastic deformation was hardly noticeable.

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S/123/60/000/023/003/008
ACC5/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1960, No. 23, p. 205,
127808

AUTHORS: Smolyanitskiy, Ya. A., Kapliy, N. I.

TITLE: The Effect of Mechanical Shrinkage Inhibition on Hot Cracking in
Castings

PERIODICAL: Tr. Donetsk. industr. in-ta, 1959, Vol. 36, pp. 111-120

TEXT: Results are expounded from an investigation of the inhibition of casting shrinkage at the origination of hot cracks. The design is described of a device for inhibiting the shrinkage by a force of constant magnitude. A special method is developed for determining the conditional strength limit of cast material in the temperature range of hot crack origination. It turned out that hot cracks develop at stresses of 1.7-2.0 kg/cm² in aluminum specimens of 10 mm thickness, 20 mm width, and 200 mm length, if they solidify in sand molds; the magnitude of the shrinkage inhibition force does not affect the instant of cracking, but increases their size; hereat, the tensile strength of metal increases, too. The

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S/123/60/000/023/003/008
A005/A001

The Effect of Mechanical Shrinkage Inhibition on Hot Cracking in Castings

results from the investigation are compiled in tables and graphs. There are 7 figures and 5 references.

S. Yu. A.

Translator's note: This is the full translation of the original Russian abstract. ✓

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S/128/60/000/012/011/014
A054/A030

AUTHOR: Smolyanitskiy, Ya.A.

TITLE: The Determination of Foundry Shrinkage and the Elastic-Plastic Deformation of Various Parts of the Castings

PERIODICAL: Liteynoye proizvodstvo, 1960, No. 12, pp. 36 - 37

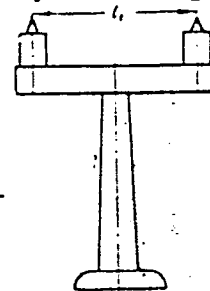
TEXT: Mechanical and thermal retardation of shrinkage results in plastic deformations in the casting, during the entire cooling time from the first appearance of shrinkage until the final temperature is reached. The deformations are unevenly distributed in the casting and it is necessary to know their mechanism in order to control the factors retarding shrinkage, the appearance of cold and hot cracks of deformations and to establish an adequate technology for pouring. The phenomena occurring during retarded shrinkage in the course of hardening and cooling are described in Reference 1 (Korol'kov, A.M.: "The Phenomena of Shrinkage in Castings of Cracks During Hardening", AN USSR, Moscow, 1957), the concentration of deformations by uneven temperature distribution along the sample are discussed in Reference 2 (Smolyanitskiy, Ya.A. and Ivashchenko, V.M.: "News of Schools of Higher Education", Iron Metallurgy, 1958, No. 4) but these reports

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S/128/60/000/012/011/014
A054/A030

The Determination of Foundry Shrinkage and the Elastic-Plastic Deformations of Various Parts of the Castings

refer to laboratory tests on straight, small samples, carried out with rather intricate instruments. The present article deals with the determination of the elastic-plastic deformations and the values of actual, free and delayed shrinkage in various parts of the casting. With the device shown in Figure 1 pairs of conical index marks are made in the lower and upper parts of the mold and also on the cores; the distance l_1 between these pairs is established in accordance with the size and the structure of the casting, the extent of uneven distribution of temperature and the dimensions of the places where deformations concentrate. The dimensions of the conical protrusions on the device are chosen in accordance with the kind of casting and its liquidity with its external dimensions and its cross section. For instance, for malleable cast iron or silumin sufficiently precise and acute-angle protrusions can be obtained, when the height of the cone is 3 mm and the diameter of its base 4 mm. For steel castings and large castings of any alloy the protrusions have to be larger. The distance between the tops of the conical protrusions l_2 can be measured with a slide caliper with a reading accu-



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S/128/60/000/012/011/014
A054/A030

The Determination of Foundry Shrinkage and the Elastic-Plastic Deformations of Various Parts of the Castings

racy of 0.05 mm. The value of absolute shrinkage is obtained from the difference in the readings of the distance between the markings in the mold and the protrusions on the casting $y = l_1 - l_2$, the actual shrinkage is determined from $E = (l_1 - l_2) : l_1 \cdot 100\%$. The results for free and thermally retarded shrinkage in various parts of a malleable cast iron holding device before and after tempering are represented in Figure 2. There are 2 figures and 2 Soviet references.

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S/128/60/000/012/011/014
A054/A030

The Determination of Foundry Shrinkage and the Elastic-Plastic Deformations of Various Parts of the Castings

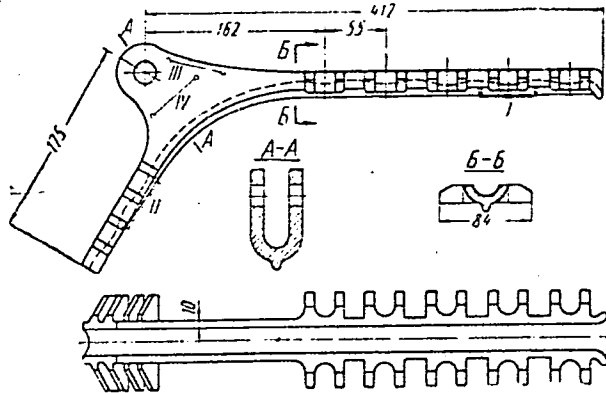


Figure 2: Free and retarded shrinkage in a holding devie. Due to the uneven speed of cooling the casting deforms in the direction indicated by arrows. In section III, IV tensile stresses and deformations occur, in sectors I, II shrinkage is free.

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