

MANVELYAN, M.; MANUKYAN, R.; DAVYDOVA, N.; MIKAYELYAN, V.

White opaque glaze with a base of nepheline syenites, Prom.Arm.
5 no.12:39-40 D '62. (MIRA 16:2)

1. Institut khimii Soveta narodnogo khozyaystva Armyanskoy SSR.
(Glazes) (Armenia—Syenite)

GEVORKYAN, Kh.; DZHANPOLADYAN, L.; MANUKYAN, R.

Vedi white table wine. Prom.Arm. 5 no.11:32-34 N '62.
(MIRA 15:12)

1. Institut vinogradarstva, vinodeliya i plodovodstva
(for Gevorkyan, Dzhanpoladyan). 2. Vedinskiy vinokurenny
zavod (for Manukyan).

(Vedi—Wine and wine making)

MANUKYAN, R.; GEVORKYAN, Kh.

"Kakhet" variety of the red dessert wine. Prom.Arm. 5
no.11:37 N '62. (MIRA 15:12)
(Vedi---Wine and wine making)

MANUKYAN, R.A.

Calculations pertaining to high columns subjected to concentrated forces applied to points at the upper edge. Izv. AN Arm. SSR. Ser. FMET nauk 7 no.1:35-58 Ja-F '54. (MLRA 8:2)

1. Leningradskiy politekhnicheskii institut im.M.I.Kalinina.
(Columns, Iron and steel) (Elastic rods and wires)

MANUKYAN, R.S., inzh. (Tbilisi); PAVERMAN, S.V., inzh. (Tbilisi)

Concerning the use of a computer for calculating optimum
load distribution between different types of systems of thermal
electric power plants. Elektrichestvo no.4:33-36 Ap '62.
(MIRA 15:5)

(Electric power plants)
(Electric power distribution)

MANUKYAN, R. S.: Master Med Sci (diss) -- "The surgical clinical treatment
of C-avitaminosis". Baku, 1958. 20 pp (Azerb State Med Inst im N. N.
Narimanov), 220 copies (KL, No 1, 1959, 145)

MANUKYAN, R.S.

Course of operative wounds and postoperative complications in vitamin C deficiency [with summary in English]. *Khirurgia* 34 no.2:51-58
F '58. (MIRA 11:4)

1. Iz kafedry obshchey khirurgii (zav. - zasluzhennyi deyatel' nauki prof. Z.M.Mamedov) Azerbaydzhanskogo meditsinskogo instituta.

(SCURVY, physiol.

eff. on wds healing & postop. compl. (Rus))

(SURGERY, OPERATIVE

eff. of scurvy on wds healing & postop. compl. (Rus))

MANUKYAN, R.S.

Clinical features of certain surgical diseases and postoperative complications. in vitamin PP deficiency. Khirurgia 34 no.7:35-39
Jl '58 (MIRA 11:9)

1. Assisten kafedry obshchey khirurgii (zav. - zaslyzhenyy deyatel' nauki prof. Z. Mamedov) Azerbaydzhanskogo meditsinskogo instituta.
(SURGERY, OPERATIVE, complications
postop. compl. caused by vitamin B. defic. (Rus))
(VITAMIN B DEFICIENCY,
causing postop. compl. in certain surg. dis. (Rus))

MANUKYAN, R.S., kand.med.nauk

Course of purulent processes in vitamin C deficiency. Khirurgia 35
no.7:62-66 JI '59. (MIRA 12:12)

1. Iz kafedry obshchey khirurgii (zav. - zasluzhennyy deyatel' nauki
prof. Z.M. Mamedov) Azerbaydzhanskogo meditsinskogo instituta im.
N. Narimanova.

(INFECTION, complications)

(VITAMIN C DEFICIENCY, complications)

MANUKYAN, R.S., kand.med.nauk

Circular resection of a bone in chronic diaphysary osteomyelitis
with replacement of the defect formed by an autotransplant insert.
Azerb.med.zhur. no.3:73-76 Mr '60. (MIRA 13:6)

1. Iz kafedry obshchey khirurgii (zav. - zaslushennyy deyatel'
nauki, prof. Z.M. Mamedov) Azerbaydzhanskogo gosudarstvennogo
meditsinskogo instituta im. N. Narimanova.
(OSTEOMYELITIS) (BONE GRAFTING)

L 27889-65 EWT(d)/EWP(1)/EED-2 Po-l/Pq-l/Pg-l/Pk-l IJP(c) BB/GG/GS
ACCESSION NR: AT5003950 s/0000/64/000/000/0258/0265

AUTHOR: El'kin, S. R.; Mamukyan, R. S.; Totladze, Z. D.

51
B71

TITLE: Computer^{16c} for the calculation of the economic distribution of loads in a mixed power system

SOURCE: Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti. Nauchno-tekhnicheskoye soveshchaniye. 3d, Moscow, 1962. Vychislitel'naya tekhnika dlya avtomatizatsii proizvodstva (Computer technology for the automation of production); trudy soveshchaniya. Moscow, Izd-vo Mashinostroyeniye, 1964, 258-265

TOPIC TAGS: analog computer, optimal control, power system control

ABSTRACT: An analog simulator for the Georgian power system is described, developed at the Tbilisskiy nauchno issledovatel'skiy institut priborostroyeniya i sredstv avtomatizatsii (TNIISA - Tbilisi Scientific Research Institute of Instruments and Automation Equipment), and intended to facilitate economic decisions involved in the interconnection of hydroelectric and steam generating stations. The system of differential equations and the computer form of its solution are

Card 1/2

L 27889-65

ACCESSION NR: AT50Q3950

described. The computer yields automatically the optimal redistribution of power among the individual units of a power station or among several power stations following the addition or removal of a load increment. The computer also determines automatically the water-flow coefficients of the individual hydroelectric stations in the system, and takes into account the active losses in the system transmission lines. Orig. art. has: 2 figures and 10 formulas.

ASSOCIATION: None

SUBMITTED: 01Sep64

ENCL: 00

SUB CODE: DP, IE

NR REF SOV: 004

OTHER: 000

Card 2/2

MANUKYAN, R.S., kand. med. nauk, zasluzhennyy vrach AzSSR (Baku, prospekt
Lenina, d.80, kv.18)

Pathological anatomy of heart injuries. Vest. Khir. 91
no.12:81-83 D '63. (MIRA 17:9)

1. Iz kliniki obshchey khirurgii (zav.- prof. Z.M. Mamedov)
Azerbaydzhanskogo meditsinskogo instituta imeni N.Narimanova.

MANUKYAN, R.S.; MAMEDOV, A.Z.

Heart injuries; based on materials of the N.A. Semashko Hospital.
Khirurgiya no.10:139-140 '64. (MIRA 18:8)

MANUKYAN, R.S.; MAMEDOV, Z., prof., red.

[Materials on the study of surgical aspects of avitaminosis C]
Materialy k izucheniiu khirurgicheskoi kliniki avitaminoza C.
Baku, Azerbaidzhansko gos. izd-vo, 1965. 118 p.
(MIRA 18:6)

GORNSHTEYN, V.M., kand. tekhn. nauk; MANUKYAN, R.S., inzh.; PAVERMAN, S.V.,
inzh.

Consideration of limitations in the form of disparity in the
calculation of economical operation of a thermal electric
power plant using an analog computer. Elektrichestvo no.4:
79-80 Ap '65. (MIRA 18:5)

MANUKYAN, R.F., brigadir, Geroy Sotsialisticheskogo Truda

In a field crop brigade. Zashch.rast.ot vred.i bol. 5 no.7:
13-14 JI '60. (MIRA 16:1)

1. Kolkhoz imeni Ordzhonikidze, Oktemberyanskogo rayona,
Armyanskoy SSR.

(Cotton—Diseases and pests)
(Spraying and Dusting in agriculture)

MANVELYAN, M.G., akademik; MANUKYAN, R.V., inzh.; DAVIDYANTS, N.S., inzh.

Transparent glazes on a base of "erevanite." Stek. i ker. 22
no.6:14-15 Je '65. (MIRA 18:6)

1. Yerevanskiy nauchno-issledovatel'skiy institut khimii Gosudarstven-
nogo komiteta khimicheskoy promyshlennosti pri Gosplane SSSR.

STEPANYAN, G.G.; HADALOVA, L.L.; MANUKYAN, S.S.

Effect of native gastric juice on the secretory function of the stomach in esophagotomized dogs. Izv. AN Arm. SSR. Biol. nauki 12 no.6:15-23 Je '59. (MIRA 12:10)

1.Kafedra fiziologii Yerevanskogo zooveterinarnogo instituta.
(GASTRIC JUICE)

STEPANYAN, G.G.; BADALOVA, L.L.; MANUKYAN, S.S.

Effect of native gastric juice on the secretory function of the
small intestine. Izv. AN Arm. SSR. Biol. nauki 14 no.8:23-28
Ag '61. (MIIA 14:9)

1. Kafedra fiziologii Yerevanskogo zooveterinarnogo instituta.
(GASTRIC JUICE) (INTESTINES---SECRETIONS)

L 1633-66

ACCESSION NR: AP5018547

UR/0298/65/018/006/0069/0073

AUTHOR: Badalova, L. L.; Stepanyan, G. G.; Manukyan, S. S. 18B

TITLE: Effect of natural stomach juice of dogs on the phagocytal function of the reticuloendothelial system of rabbits

SOURCE: AN ArmSSR. Izvestiya. Biologicheskiye nauki, v. 18, no. 6, 1965, 69-73

TOPIC TAGS: experiment animal, therapeutics, cell physiology, digestive system disease, wound

ABSTRACT: Earlier experimental and clinical work demonstrated that stomach juice may exert a therapeutic and stimulatory effect in the treatment of festering wounds, acute and chronic diseases of the gastrointestinal tract, some diseases of the genital organs, and anemia. The present work was conducted on 5-7 month old rabbits in 3 series and extended over 3 years. Phagocytal function was determined in the blood with Congo red, whose index is inversely proportional to the phagocytal activity of the reticuloendothelial system. Serum protein levels were determined, and animals were also

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L 1633-66

ACCESSION NR: AP5018547

subjected to clinical observation. The animals received a 2 ml/kg dose of stomach juice either orally with food or subcutaneously, or both simultaneously every day or once a week for weeks or months. Control animals received physiological saline solutions under the same conditions and indices were determined once a week. Results varied little for the 3 series. The test animals showed consistently lower indices, that is, higher phagocytal functions compared to the control, the indices being 82.4 versus 85.9. Test animals also showed a consistently higher weight gain. No significant differences in serum proteins were observed. Stomach juice apparently increases the natural resistance of the organism, but the mechanism of this effect is not understood at this time. Orig. art. has: 3 tables.

ASSOCIATION: Kafedra fiziologii Erevanskogo zooveterinarnogo instituta (Physiology Department of the Erevan Zoological Veterinary Institute)

SUBMITTED: 07Apr64

ENCL: 00

SUB CODE: LS

NR REF SOV: 012

OTHER: 000

Card 2/2

MANUKYAN, V.R.; SIMONOV, P.V. (Moskva)

Nature of central inhibition in mechanical trauma. Pat.
fiziol. i eksp. terap. 6 no.1:43-49 Ja-F '62. (MIRA 15:3)

1. Iz Glavnogo voyennogo gospitalya imeni N.N. Burdenko.
(NERVOUS SYSTEM) (TRAUMATISM)

ADZHEMYAN, V.G.; AVAKYAN, V.A.; MANUKYAN, V.S.

Grinding heads for lathes. Stan. 1 instr. 36 no.4:28-29 Ap '65.
(MIRA 18:5)

BABAYAN, A.S.; MANUKYAN, V.V.

The shield bug in the Armenian S.S.R. Izv.AN Arm.SSR.Biol.1
sel'khoz.nauki. 5 no.9:81-84 '52. (MLRA 9:8)

1. Institut fitopatologii i zoologii AN Armyanskoy SSR.
(Armenia--Eurygasters) (Grain--Diseases and pests)

MANUKYAN, V.V.

Ultraviolet insect trap. Zashch. rast. ot vred. i bol. 3 no.5:
41 S-0 '58. (MIRA 11:10)

1. Zaveduyushchiy sektorom sluzhby ucheta i prognozov Ministerstva
sel'skogo khozyaystva Arayanskoy SSR.
(Insect traps)

RYABCHENKO, Averin, agronom-entomolog; BOGOVIK, I.V., kand.biol.nauk;
BOGACHEV, V.L., starshiy nauchnyy sotrudnik; MARAKULIN, A.I.,
mladshiy nauchnyy sotrudnik; YATSENKO, G.K.; RUPAYS, A.A., agronom-
entomolog; CHIKVILADZE, I.D., kand.sel'skokhozyaystvennykh nauk;
SEMENOV, A.Ye., kand.sel'skokhozyaystvennykh nauk; MANUKYAN, V.V.

Brief reports. Zashch.rast.ot vred.i bol. 4 no.3:54-56 My-Je
'59. (MIRA 13:4)

1. Nachal'nik Pavlodarskogo otryada po bor'be s vreditelyami (for Ryabchenko).
 2. Zaporozhskaya opyt'naya stantsiya (for Bogachev).
 3. Bostandykskoye opytnoye pole Uzbekskogo instituta sadovodstva i vinogradarstva (for Marakulin).
 4. Starshiy agronom Khabarovskoy karantinnoy inspektsii (for Yatsenko).
 5. Zaveduyushchiy sektorom slushby ucheta i prognozov Ministerstva sel'skogo khozyaystva ArmSSR (for Manukyan).
- (Plant diseases) (Agricultural pests)

MANUKYAN, Ye. F.

Manukyan, Ye. F. "The influence of the Dzermuk mineral waters on stomach secretions",
in the collection: B₁l'neo-klimtich. kurort Dzhermuk, Issue 1, Y_erevan, 1948, p. 45-56.

SO; U-2888, 12 Feb. 53, (L₁topis' Zhurnal 'nykh Statey, NO. 2, 1949).

KATANYAN, A.A., - prof.; MANUKYAN, Ye.F., dotsent

Changes in the blood lipid content in atherosclerosis and
hypertension during the process of treatment. Trudy Erev.med.
inst. no.11:211-215 '60. (MIRA 15:11)

1. Iz kafedry terapii fakul'teta usovershenstvovaniya vrachey
(zav. - prof. A.Katanyan) Yerevanskogo meditsinskogo instituta.
(ARTERIOSCLEROSIS) (HYPERTENSION) (LIPIDS)

S/119/63/000/002/004/014
A004/A127

AUTHORS: Bukreyev, I.N., Manukyan, Yu.S., Elizbarashvili, O.A.

TITLE: Slave sweep of high-speed oscillograph

PERIODICAL: Priborostroyeniye, no. 2, 1963, 9 - 11

TEXT: An analysis of the existent sweep generator circuits reveals that circuits with vacuum-electron tubes possess the highest triggering stability and relatively low lag times in comparison with circuits fitted with thyratrons. One of the circuits ensuring a stable synchronization at high repetition rates of the pulses to be investigated is the h-f high-speed slave sweep operating from every pulse at a repetition rate of up to 3 Mc. The authors present the block diagram of a high speed oscillograph slave sweep and a detailed description of a "saw-type" triggering oscillator. The analyzed circuit can be used both under the "slave" and "self-oscillating" condition. The change-over of the circuit from the "slave" condition to the "self-oscillating" condition and vice versa is performed by changing the cathode potentials of the Π_2 (L_2) and Π_5 (L_5) tubes. There are 4 figures and 1 table.

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ACCESSION NR: AR4020785

S/0271/64/000/002/B044/B045

SOURCE: RZh. Avtomat., telemekh. i vy^{chislitel}. tekhnika, Abs. 2B281

AUTHOR: Bukreyev, I. M.; Chavchanidze, V. V.; Manukyan, Yu. S.; Sergeyenko, N. D.

TITLE: Circuit for distinguishing numbers in modulus in high speed electronic accumulators

CITED SOURCE: Tr. In-ta kibernetiki, AN GruzSSR, v. 1, 1963, 105-110

TOPIC TAGS: absolute comparator, accumulator, high-speed accumulator, absolute value comparison, computer, comparator circuit absolute value

TRANSLATION: A device is described for comparing the absolute values of two numbers A and B without subtraction operations or analysis of the result. The operation of the differentiator is based on a known method of comparing the absolute values when positional notation is used for the numbers. The method is roughly stated thus: the number whose left-hand digit is the top digit has the greater modulus. In the binary system the algorithm for comparing

Card 1/3 *v*

ACCESSION NR: AR4020785

the absolute values of two numbers A and B appears as follows: the identical bits of the numbers A and B are scanned sequentially beginning with the left-hand digit until the bits having different digits are found (10 or 01); the number having 1 in the indicated bit has the greater absolute value. The schematic diagram for realizing this principle is given (see enclosure). Four AND circuits in each bit are controlled by input triggers of the registers containing the numbers A and B. They determine the binary digit combinations 11, 00, 10, and 01. Signals from the AND circuits travel over two paths. When $A < B$ a signal appears at the output of the first path; when $A > B$ at that of the second. When neither of these signals is present, it means that $A = B$. Use of this number comparison method in accumulators makes it possible to add algebraically without having to convert the numbers into an auxiliary or inverse code. Orig. art. has 2 figs., 1 table, and 5 refs.

G. K.

DATE ACQ: 03Mar64

SUB CODE: AI

ENCL: 01

Card 2/32

ACCESSION NR: AR4020789

S/0271/64/000/002/B054/B054

SOURCE: RZh. Avtomat., telemekh. i vy*chislitel. tekhnika, Abs. 2B338

AUTHOR: Bukreyev, I. N.; Manukyan, Yu. S.; Ayasyan, A. A.; Kapilevich, I. B.

TITLE: Certain applications of UHF diode multiplexers in arithmetic units of discrete computers

CITED SOURCE: Tr. In-ta kibernetiki. AN GruzSSR, v. 1, 1963, 111-116

TOPIC TAGS: diode multiplexer, UHF diode multiplexer, discrete computer, arithmetic unit, waveguide commutator, carry circuit, successive carry circuit

TRANSLATION: A method is described for accelerating the operation of an arithmetic unit by using a waveguide commutator in the successive carry circuit. To fit this method into a computer, the parallel and series elements and circuits of the logic must be structurally distinct. Examples are given of the accumulator built on this principle, as well as of the waveguide unit using a D403V diode. Orig. art. has 4 refs. S. P.

DATE ACQ: 03Mar64

SUB CODE: SD, CP

ENCL: 00

Card 1/1

L 47315-65 RED-2/EWT(d)/EMP(1) PG-4/Pq-4 IJP(c) BB/CG/CS

ACCESSION NR: AT5097877

S/0000/64/000/000/0045/0056

AUTHOR: Chkheidze, M. V.; Machavariani, G. A.; Manukyan, Yu. S. Shekziladze, V. I.

TITLE: Analog to digital converters 160

SOURCE: Ali GruzSSR. Institut kibernetiki. Elementy kiberneticheskikh sistem
(Elements of cybernetic systems). Tiflis, Izd-vo Metsniyereba, 1964, 45-56

TOPIC TAGS: analog to digital converter, computer component, code converter

ABSTRACT: This article describes a device for converting voltages into a proportional number of pulses. This is a simple transistorized converter. By the proper selection of temperature compensation circuits and transistors, an accuracy of 0.1 percent may be realized. The simplest methods and circuits for the conversion of voltage into code, of the sequential type, compare the voltage being converted with a voltage produced by certain storage elements. A circuit for such a converter in combination with a "filler" pulse generator is given in fig. 1 of the Enclosure. The use of a "plug-in" circuit in this type of converter makes it possible to obtain high frequencies without overloading the collector and emitter. In this case a

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L 47315-65

ACCESSION NR: AT5007877

quartz resonator is used as an ordinary high Q oscillation circuit. In this way the stability of the generator is increased. This conversion process is a combination of two processes: a) conversion of the amplitude of the input pulse into a time interval proportional to this amplitude; b) filling this interval with metering pulses produced by the generator, the number of which is proportional to the time interval. In order to avoid the effects of ambient temperature changes during the experiments, the converter was thermostatically controlled. When the temperature error of the converter was determined, it was possible to use a temperature compensating circuit. The final exact parameters of this converter determined by tests, are: 1. accuracy of conversion--up to 0.1 percent, depending upon the transistors used; 2. maximum speed of conversion--500 conversions per second; 3. maximum frequency of filler pulses--1 mc; 4. range of variation in the input voltage-- ± 15 volts; 5. maximum permissible level of voltage being converted--30 volts; 6. minimum power consumed by the converter from the driver-- $8 \cdot 10^3$ volts; 7. feed voltage into the emitter circuit of the linearity control transistor--1.2 volts; 8. collector voltage for the metering pulse generator--2.5 volts. Orig. art. has: 7 figures, 6 formulas.

Card 2/4

L 47315-65
ACCESSION NR: AT5097877

ASSOCIATION: none

SUBMITTED: 07Jul64

NO REF SOV: 002

ENCL: 01

OTHER: 000

SUB CODE: EC, DP

Card 3/4

L 47315-65

ACCESSION NR: AT5007877

ENCLOSURE: 01

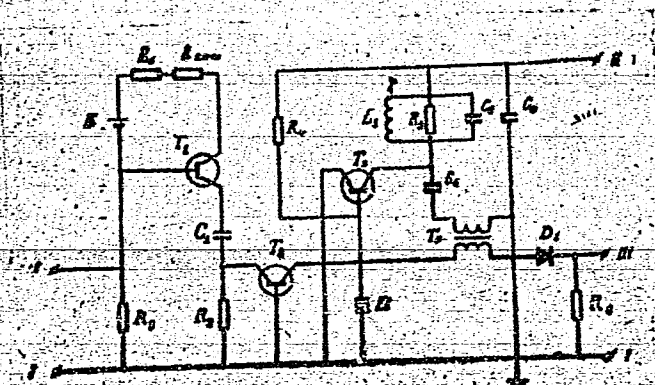


Fig. 1

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E 47301-65

ACCESSION NR: AT5007878

S/0000/64/000/000/0057/0077

AUTHOR: Manukyan, Yu. S.

17
B+1

TITLE: Gray code counters

SOURCE: AN GruzSSR. Institut kibernetiki. Elementy kiberneticheskikh sistem (Elements of cybernetic systems). Tiflis, Izd-vo Metsniyereba, 1964, 57-77

TOPIC TAGS: computer component, Gray code, counter circuit, pulse counter

ABSTRACT: This article reviews the existing Gray code counters. First, these counters are classified according to the principle of Gray code formation in the counter itself. The basic and most important characteristic of Gray code is that the representations of two adjacent natural numbers differ in only one digit. In comparison with the ordinary binary counter, the Gray code counter has much better interference suppression. The design characteristics of Gray code counters are discussed. The most common and important characteristic of the design of Gray code counters is the method of producing the code in the counter itself. The circuit is built to add "one" to a quantity (direct counting), and to subtract "one" from a quantity (reverse counting). Since all odd input pulses in direct counting cause

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L 47301-55

ACCESSION NR: AT5007878

changes in only the first digital place, and all even pulses cause changes in one of the remaining digits, an additional "zero digit", also called a "parity flip-flop" is used. An interesting counter of this type is one designed for the distribution of pulses along given channels in accordance with the code used in the counter. Serial counters are used for a small number of digits. The substitution of flip-flops for passive delay networks in a system with a large number of digits would lead to an unjustifiable increase in the amount of equipment necessary. For example a ten digit counter would require 55 flip-flops. However usually Gray code counters must be not only simple and reliable, but also fast-operating. In series-parallel counters the shift circuit is controlled by the read-out of a "zero" from a flip-flop of the first digit rather than by the even input pulses. The even input pulses are fed into the control rectifiers of all digital places simultaneously. These digital places consist of voltage-pulse type circuits with three inputs. In most Gray code counters the time interval between the input pulse and reversal in the counter is not constant, even with periodic input signals. This increases the probability of error during read-out without stopping the counter. The circuit proposed by the author assures reversal of information in the counter immediately after the introduction of each input pulse. Double-register Gray code counters were built in the Soviet Union in 1958 and slightly later in the United States. A

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L 47361-65

ACCESSION NR: AT5007878

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differentiating circuit is connected to the output of each flip-flop of a binary counter in such a way that the negative pulses are used only in the binary counter and the positive pulses control the Gray code register. Positive pulses appear at the outputs of these differentiating circuits only when their respective flip-flops switch from "zero" to "one." Since one input pulse can produce such a change-over in only one digit of a binary counter, each input pulse in the Gray code register will correspond to the switching of one digit. When comparing the single-register and double-register Gray code counters, it is clear that the single-register counter requires less equipment and therefore is more economical. For this reason, double-register counters are usually used in digital control or regulating systems, where the information is presented in various scales of notation. The reversibility of the rules of addition and subtraction of "ones" in Gray code permits the construction of single-register Gray code counters with either series or parallel inputs. The design of the control system for switching in the counting register remains unchanged for either the conditions of "addition" or the conditions of "subtraction."

Card 3/4

L 47301-65

ACCESSION NR: AT5007878

ASSOCIATION: none

SUBMITTED: 07Jul64

ENCL: 00

SUB CODE: DP, EC

NO REF SOV: 008

OTHER: 005

0

ml
Card 4/4

L 47302-65

ACCESSION NR: AT5027879

S/0065/64/000/000/0079/0088

AUTHOR: Manukyan, Yu. A.; Chkheidze, M. V.; Khristesashvili, V. G.; Machavariani, G. A.

15
B+1

TITLE: A method for constructing a Gray code counter

SOURCE: AN GruzSSR. Institut kibernetiki. Elementy kiberneticheskikh sistem (Elements of cybernetic systems). Tiflis, Izd-vo Metsniyereba, 1964, 79-88

TOPIC TAGS: Gray code, computer component, flip flop circuit, counter circuit

ABSTRACT: The article discusses a method for the construction of a Gray code counter in which the parity check flip-flop is controlled not by input pulses, but by signals fed back from the main counter register. In order to minimize errors due to ambiguous readings without stopping during read-out, Gray code counters are widely used. The counting input of each flip-flop in a counter register is connected to a coincidence circuit, one input of which is connected to the output of the preceding flip-flop. The second coincidence circuit input is connected to a delay line and the third is connected to the output of a so called forbidden-combination flip-flop. The purpose of this flip-flop is to prevent the further opera-

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L 47302-65

ACCESSION NR: AT5907879

tion of flip-flops after the addition of a one to any even or odd number, which is already present in the counter register. In all present Gray code counters the input counting pulses act directly on input of the parity flip-flop. Therefore, a chance error in any of the digital places will necessarily lead to a false reversal which results in a rapidly increasing and completely inadmissible error. The circuit considered in this article is distinguished by the fact that the counting pulses do not act on the parity flip-flop but go directly into one of the digital places of the counter register. The position of the parity flip-flop is changed by a signal, which indicates that switching has already taken place in the desired digital place. An error in any of the digits leads only to the loss of the pulse. The following pulse again acts on the digit in which the error occurred. However, this counter is no more reliable with respect to the parity check place than are other circuits, since there is still the possibility of a false reversal due to errors in the parity flip-flop. It should be noted that in these circuits it is possible to check the errors in the register made during counting so that this information may be used in analyzing the results. For this purpose it is only

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ACCESSION NR: AT5007879

necessary to introduce a half-adder into the circuit, and to connect its inputs to the input of the counter and to the output of the general register assembly respectively.

ASSOCIATION: none

SUBMITTED: 07Jul64

ENCL: 00

SUB CODE: DP, EC

NO REF SOV: 003

OTHER: 000

ml
Card 3/3

L 47314-55 EED-2/EWT(d)/EWP(1) PG-4/PK-4/PL-4/PQ-4 IJP(c) GG/BB/GS

ACCESSION NR: AT5007880

S/0000/64/000/000/0089/0099

AUTHOR: Manukyan, Yu. S.; Chkheidze, M. V.; Machavariani, G. A.; Datiashvili, G. V.

TITLE: The use of a Gray code register for code to voltage conversion

SOURCE: AN GruzSSR. Institut kibernetiki. Elementy kiberneticheskikh sistem
(Elements of cybernetic systems). Tiflis, Izd-vo Metsniyereba, 1964, 89-99

TOPIC TAGS: code converter, Gray code, binary code, computer component

ABSTRACT: In some cases it is useful to perform part of the logical operations in a numerical control system directly in Gray code, without preliminary translation of the information into binary code. In this case it is convenient also to avoid additional transformations from Gray code into binary code at the output of the machine by converting numerical quantities into analog quantities. Of all the known methods for converting binary code numbers into proportional values of voltage or current, the most important is the method of intermediate conversion of the number into time intervals. In order to obtain the counterpart of a number which is represented in Gray code, it is only necessary to reverse the information which is recorded in the most significant digital place of the register being used for re-

Card 1/3

L 47314-65

ACCESSION NR: AT5007880

ording the numbers of a given system. The information in the remaining digital places is left unchanged. However the use of the counterparts of the Gray code number and the use of a Gray code register for converting Gray code into voltage is not the best solution to the problem. The authors propose the following method: During each conversion cycle, a count of the separate pulses, having a constant frequency f , is made in the same system in which the number being converted is expressed. The values of the results obtained from this are continuously compared with the quantity being converted until they are equal. The time interval t_1 from the beginning of the count until the quantities become equal is taken as the equivalent of the number to be converted and is used for pulse width modulation of a source of stabilized direct voltage or current.

$$\left(t_1 = \frac{N}{f}\right).$$

The time interval t_2 from the moment of equalization to the end of the conversion cycle is always proportional to the counterpart of the number being converted.

$$t_2 = \frac{N+1}{f}.$$

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It should be noted that for proper operation of the circuit, the duration of the stable pulses must be greater than the time required for the equalizing signal to travel from the most significant digital place to the least significant. It should also be mentioned that the conversion circuit discussed here is in no way related to the design of the register used. Any Gray code register may be used. Orig. art. has: 4 figures, 12 formulas.

ASSOCIATION: none

SUBMITTED: 07Jul64

ENCL: 00

SUB CODE: DP, EC

NO REF SOV: 002

OTHER: 000

Card 3/374

L 47311-65

ACCESSION NR: AT5007882

S/0000/64/000/000/0107/0118

AUTHOR: Chkheidze, M. V.; Manukyan, Yu. S.

12
B41

TITLE: The problem of linear conversions between binary code and Gray code

SOURCE: AN GruzSSR. Institut kibernetiki. Elementy kiberneticheskikh sistem (Elements of cybernetic systems). Tiflis, Izd-vo Metsniyereba, 1964, 107-118

TOPIC TAGS: binary code, Gray code, code convertor, binary-Gray conversion, multichannel servosystems

ABSTRACT: The authors analyze the rules governing forward and reverse conversion between Gray code and ordinary binary code. This conversion is widely used in analog-to-digital converters, where Gray code makes it possible to reduce the inherent errors arising from indeterminacy to a level not exceeding the value of one unit in the least significant digit of the code word. A device designed according to the obtained rules is described. It performs the conversion directly in the register and records the converted expression. A schematic diagram of the unit is given in fig. 1 of the Enclosure, where $T_1 - T_4$ are the triggers forming the register into which the number to be converted is inserted; $AND_1 - AND_3$ are "AND" logic

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ACCESSION NR: AT5007882

cells of the potential pulse type; OR₁-OR₃ are logic cells; and DL₁ and DL₂ are time delay cells (delay cable or artificial line). An experimental 5-digit trigger register has been built on this design which operates at a speed of over 1 mc and uses RKZ-400 cable for the delay line. It is sufficiently simple for use in mixed converters using binary and Gray code. In particular, it is applicable to multi-channel digital servosystems employing analog-to-digital conversion. Orig. art. has: 3 figures, 4 formulas.

ASSOCIATION: none

SUBMITTED: 07Jul64

ENCL: 01

SUB CODE: DP

NO REF SOV: 003

OTHER: 003

Card 2/3 2

E 47310-65 EWA(h)/EWP(k)/EWT(d)/EWT(l)/EWP(h)/EWP(l)/EWP(v) Pf-4/Peb GS

ACCESSION NR: AT5007884

S/0000/64/000/000/0133/0140

AUTHOR: Chkheidze, M.V.; Manukyan, YU. S.

25
841

TITLE: A method for accurate comparison of numbers

SOURCE: AN GruzSSR, Institut kibernetiki. Elementy kiberneticheskikh sistem (Elements of cybernetic systems). Tiflis, Izd-vo Matsniyereba, 1964, 133-140

TOPIC TAGS: comparator, digital automatic control system, pulse counter

ABSTRACT: Comparison of numbers is important in computer technology for qualitative evaluation of machine results. Number comparison and determination of the sign of the difference are both important operations in specialized computers for automatic control systems. Arithmetical subtraction devices are inefficient for this function. Although number comparisons are easily performed in binary code, in some other codes they are difficult or even impossible by ordinary methods. A method is described for comparison of two numbers and determination of the sign of the difference which is applicable to any code and can give the result in another code. It is fast enough for most control machines, and extremely fast if limited

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ACCESSION NR: AT5007884

to numbers shorter than 10 digits. In this method the two numbers to be compared are placed in identical counters. Pulses are added simultaneously to each counter until one is full. The pulse series is continued until the second counter is full, and the difference is read from the number of pulses counted after the first and before the second counter was full. The sign is determined by identifying the first counter to be filled and the last, which is accomplished using a circuit with 2 "AND" gates. It is also possible to perform additional operations (e.g., addition-subtraction or multiplication-division) on the result simultaneously with the comparison; the authors discuss this briefly. Finally, the method is compatible with widely used and perfected standard units (reverse counters, pulse generators, half-adders, etc.), can simplify the comparison of two numbers in automatic control systems, and makes it possible to design precision digital comparators using ordinary engineering methods. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 07Jul64

ENCL: 00

SUB CODE: DP

NO REF SOV: 002

OTHER: 001

Card 2/27MB

L 47303-65

ACCESSION NR: AT9907685

S/0000/64/000/000/0141/0153

12
B+1

AUTHOR: Manukyan, Yu. S.; Chkheitze, M. V.; Machavariani, G. A.

TITLE: On the problem of place-by-place comparison in Gray code, beginning with the least significant digital places

SOURCE: AN GruzSSR. Institute kibernetiki. Elementy kiberneticheskikh sistem (Elements of cybernetic systems). Tiflis, Izd-vo Metsniyereba, 1964, 141-153

TOPIC TAGS: Gray code, comparator, digital servosystem, code conversion, algorithm

ABSTRACT: An algorithm is formulated for logical comparison of two numbers directly in Gray code without the preliminary operation of Gray-to-binary code conversion, which is desirable in many digital automatic regulation and control systems. Logic circuits of units for place-by-place comparison of serial gray codes transmitted beginning with the least significant digits are examined. The possibility of performing this type of comparison using one trigger with separate inputs is considered. It is demonstrated that comparison beginning with the least significant digital places is the most effective method in information converters with feedback, digital servosystems, etc. Three proposed circuits, whose block diagrams

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ACCESSION NR: AT5007885

appear in the article, can also be used to compare static (parallel) Gray codes if they have units for sequential scanning of parallel codes at their inputs. A fourth proposed circuit diagrammed in the article is for a "universal" comparison unit capable of operating in both Gray and binary codes. Orig. art. has: 4 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 07Jul64

ENCL: 00

SUB CODE: DP

NO REF SOV: 003

OTHER: 001

Mt
Card 2/2

CHKHEIDZE, M.V.; MANUKYAN, Yu.S.; MACHAVARIANI, G.A.

Comparison of numbers represented in the Gray code. Soob. AN
Gruz. SSR 33 no.1:183-190 Ja '64. (MIRA 17:7)

1. Institut kibernetiki AN Gruzinskoy SSR. Predstavleno
chlenom korrespondentom Akademii N.V. Gabashvili.

MANUKYAN, Yu.S.; CHKHEIDZE, M.V.; KHRISTESASHVILI, V.G.;
MACHAVARIANI, G.A.

Construction of Gray code counters. Soob. AN Gruz. SSR 31
no. 3:655-660 S '63. (MIRA 17:7)

1. Institut kibernetiki AN GruzSSR, Tbilisi. Predstavleno
chlenom-korrespondentom AN GruzSSR N.V.Gabashvili.

L H2010-65 EWT(1)/EWA(h) Feb 66

ACCESSION NR: AP5010951

UR/0286/65/000/007/0132/0132

AUTHORS: Manukyan, Yu. S.; Chkheidze, M. V.; Khristesashvili, V. G.; Machevariani, G. A.

TITLE: Reversible counter in Grey code. Class 42, No. 169882

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 132

TOPIC TAGS: counter circuit

ABSTRACT: This Author Certificate presents a reversible counter in Grey code containing a register on triggers with counter inputs and a parity trigger. To exclude spurious reversal with isolated misalignments of any of the counter triggers, it contains a control circuit based on a semisumator, two double input collectors, a delay line, and two coincidence circuits (see Fig. 1 on the Enclosure). One input of the first coincidence circuit controlling the first digit trigger is connected to the unit output of the parity trigger, and the second input to the counter input and to the first input of the other coincidence circuit. The second input of the second coincidence circuit is connected to the zero output of the parity trigger, and its output signal is used to control the remaining counter digits. The trigger outputs of all the counter digits are connected to a common collector whose output is connected through the double input collectors to the counter input of the parity

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ACCESSION NR: AP5010951

trigger. The output of one double input collector is connected through a delay line to the semisummary input whose output is connected to the second input of the same collector. The second input of the semisummary is connected through the other collector to both branches of the parity trigger. The reverse signals are admitted to the counter input of the parity trigger through a collector. Orig. art. has: 1 diagram.

ASSOCIATION: none

SUBMITTED: 30Mar64

ENCL: 01

SUB CODE: DP, EC

NO REF SOV: 000

OTHER: 000

Card 2/3

MANUKYAN, Yu.S.

Analyzing the operation of an electronic oscillator with a converter of the galvanometric amplifier. Izv. AN Arm. SSR. Ser. tekhn. nauk 18 no. 2:48-54 '65. (MIRA 18:12)

1. Khar'kovskiy politekhnicheskii institut imeni Lenina.
Submitted May 31, 1964.

L 26760-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP6014231

SOURCE CODE: UR/0115/66/000/003/0065/0067

AUTHOR: Manukyan, Yu. S.

38
B

ORG: none

TITLE: Better noise rejection in coding pulse counters 16V

SOURCE: Izmeritel'naya tekhnika, no. 3, 1966, 65-67

TOPIC TAGS: pulse counter, noise rejection, signal noise separation

ABSTRACT: Malfunction causes disruption of the parity balance in Gray-code counters; a malfunction in any digit causes reversing of the counter operation: addition is turned into subtraction and vice versa. A circuit is suggested which precludes the possibility of the erroneous reversing. A single-register counter is made up of a parity position (one trigger) and a counting register; the latter comprises a first-digit trigger, and other triggers connected to a special logic switch (a block diagram is supplied). This configuration suffers only a loss of one pulse when malfunction occurs in any digit of the counting register. A further modification of the circuit is claimed to completely preclude the possibility of erroneous reversing upon a single malfunction of any element. Orig. art. has: 2 figures and 8 formulas. [03]

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 003 / ATD PRESS: 4258

Card 1/1 W

UDC: 621.374.32

ACC NR: APT005659

(A, N)

SOURCE CODE: UR/0413/67/000/002/0116/0116

INVENTOR: Manukyan, Yu. S.

ORG: None

TITLE: A reversible counter in Gray code. Class 42, No. 190662 [announced by the Tbilisi Affiliate of the All-Union Scientific Research Institute of Metrology in. D. I. Mendeleev (Tbilisskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta metrologii)]

SOURCE: Izobreteniya, promyshlennyye obraboty, tovarnyye znaki, no. 2, 1967, 116

TOPIC TAGS: pulse counter, cyclic coding, flip flop circuit, adder

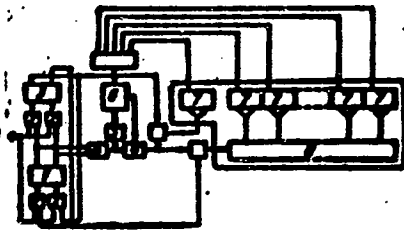
ABSTRACT: This Author's Certificate introduces a reversible counter in Gray code which contains a commutator and a register based on flip-flops with counting input. The device is designed for elimination of false reversal when there are unit failures in any of the flip-flops in the counter and also for increased speed and a reduced overall number of switching operations. The counter contains an auxiliary flip-flop with rectifiers at the inputs connected to the inputs of the flip-flop for the first digit and to the counter input. The outputs of the auxiliary flip-flop are connected through rectifiers at the input of the device to the inputs of the flip-flop for the first digit. These outputs are also connected through a collector circuit to the input of a second collector circuit and through a delay line to the input of a half-

UDC: 681.142.07:621.374.32

Card 1/2

ACC NR: AP7005659

adder. The second input of the half-adder is connected to the outputs of the register flip-flops, while the output of the half-adder is connected to the second input of the second collector circuit. The output of this collector circuit is connected to the input rectifiers of the flip-flop for the second digit and commutator. The second inputs of this flip-flop and commutator are connected to the outputs of the flip-flop for the first digit.



1--auxiliary flip-flop; 2--rectifiers; 3--flip-flop for the first digit; 4--collector circuits; 5--delay line; 6--half-adder; 7--register flip-flops; 8--commutator

SUB CODE: 09/ SUBM DATE: 06Apr65

Card 2/2

TAL'YANKER, M.Ya., konstruktor; MANULIS, V.G., konstruktor

The first in the U.S.S.R. Inform.biul.VDNKH no.1:14-15 Ja '65.
(MIRA 18:3)

1. Odesskiy zavod radial'nosverlil'nykh stankov.

MANULKIN, Z.E.; KHAZANOVICH, R.I.; KHAKIMOV, Kh.Kh.; IKRAMOV, I.T.,
AKOPOV, I.E.; YADROVA, V.M.

Reviews and bibliography. Apt. delo 13 no.3:83-87 My. Is '64.
(MIRA 13:3)

SNEGUR, L.N.; MANUKHIN, Z.M.

Synthesis of mixed organotin compounds of the triphenylmethyl-
tinhalide type. Zhur. ob. khim. 34 no.12:4030-4032 D 164
(MIRA 1881)

GYUL'BUDAGYAN, L.V.; ARSHAKYAN, R.Sh.; ROSTOMYAN, I.M.; MANUKYAN, Zh.P.

New derivatives of 4-quinaldinol. Report No.7: 6-alkoxy derivatives of 3-(p-methoxybenzyl)- and 3-(p-ethoxybenzyl)-4-quinaldinol. Report No.7: 6-Alkoxy derivatives of 3-(p-methoxybenzyl)- and 3-(p-ethoxybenzyl)-4-quinaldinols. Izv.AN Arm.SSR.Khim.nauki 15 no.5:489-492 '62. (MIRA 16:2)

1. Yerevanskiy gosudarstvennyy universitet, kafedra organicheskoy khimii.

(Quinolinol)

MANULIS, B.M.

Automation of horizontal diagonally-cutting machines. Kauch.i rez.
21 no.4:40-42 Ap '62. (MIRA 15:4)

1. Sverdlovskiy zavod rezino-tehnicheskikh izdeliy.
(Sverdlovsk--Rubber machinery)

ALIMOV, V.A., assistant; POLYAKOVA, G., student; MANULKIN, A., student;
MATVEYEV, S., student

Atherosclerosis according to autopsy data of clinics of the
Tashkent State Medical Institute collected during 12 years
(1949-1960). Med. zhur. Uzb. no.4:51-54 Ap '63.

(MIRA 17:4)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. G.N. Terekhov)
Tashkentskogo gosudarstvennogo meditsinskogo instituta.

KOGAN, A.A., professor, zaveduyushchiy; MANULEIN, A.E., dotsant; GILIAZUTDI-
NOVA, Z.Sh.

Prevention of ophthalmia neonatorum with penicillin. Akush.1 gin. no.2:
18-21 Mr-Ap '53. (MLBA 6:5)

1. Akushersko-ginekologicheskaya klinika Tashkentskogo meditsinskogo in-
stituta. (Penicillin--Therapeutic use) (Conjunctivitis, Infantile)

MANULKIN, A.E., dotsent

Condition of female sex organs in sprue. Akush. i gin. no.4:48-52
Jl-Ag '55 (MLRA 8:11)

1. Iz akushersko-ginekologicheskoy kliniki (sav.kafedroy--prof.
A.A.Kogan) Tashkentskogo meditsinskogo instituta imeni V.M.
Molotova)

(SPRUE, manifestations
genitalia, female)

(GENITALIA, FEMALE, in various dis.
sprue)

MANULKIN, Z. M.

Organic compounds of tin. S. N. Neumov and Z. M. Manulkin. *J. Gen. Chem.* (U. S. S. R.) 3, 281-7 (1933).

Me₂Sn, prepd. for the first time by the Grignard reaction under special conditions, was used in the study of the following reactions of iodation and alkylation: $Me_2Sn + I_2 \rightarrow MeI + MeSnI$ (I); $I + EtMgBr \rightarrow MeEtI + MeSnEtI$ (II); $II + I_2 \rightarrow MeI + MeSnEtI$ (III); $III + PrMgBr \rightarrow MePrI + MeSnEtPrI$ (IV); $IV + I_2 \rightarrow MeI + MeSnEtPrI$ (V). In all cases of iodation a Me group always was cleaved. *Me₂Sn*, *b.p.* 70°, was obtained in 85% yield, when 381 g. of freshly distd. *MeI* was added within 10 hrs., with cooling, to 94.6 g. *Mg* in 820-90 cc. of abs. *Et₂O*, the mixt. was boiled for 3-4 hrs. and then allowed to stand overnight (the reflux condenser cooled with *H₂O*). The next day, 110 g. of freshly redistd. *SnCl₄* was introduced in small portions within 8-9 hrs. into the reaction mixt., cooled with a mixt. of snow and *NaCl*, reaction with occasional shaking. The addn. of *SnCl₄* results in the formation of cryst. *SnCl₄·2R₂O*, with a considerable evolution of heat, which does not react with the *MeMgI* in the cold. Hence, the reaction mixt. was boiled, with shaking, for 6-8 hrs., and the condensation completed by distg. off the *Et₂O*, heating the nearly solid residue in an oil bath at 120-140° for about 8 hrs., distg. at 100° (not higher) in an oil bath and fractionating the distillate. I, *b.p.* 67-8°, *b.m.* 106-8°, was obtained in 96% yield, when 35.5 g. of powd. *I* (dried over *CaCl₂*) was added in small portions within 12 hrs. to 25 g. *Me₂Sn* (recltd. with *Na*)

in 40-50 cc. of abs. *Et₂O*). After each addn. of *I* the mixt. was boiled for about 2 hrs. to near decolorization. After the *Et₂O* and *MeI* were distd. off, the residue was filtered from the mech. impurities and fractionated *in vacuo*. II, from the mech. impurities and fractionated *in vacuo*. II, *b.p.* 104-6°, was prepd. in 81% yield by the usual Grignard reaction. III, *b.p.* 77-8°, *b.m.* 185-7°, *d₄²⁰* 2.1234, *n_D²⁰* 1.5705. IV, *b.p.* 149-51°, *d₄²⁰* 1.2014, was obtained in 86% yield. V, *b.p.* 108-11°, *b.m.* 220-30° (slight decumgn.), *d₄²⁰* 1.8182, *n_D²⁰* 1.6548, was prepd. in 86% yield. Following the method of Pope and Peachy (*Proc. Chem. Soc.* (London) 10, 42, 116 (1901)) for the isolation of *d-V* with *Ag₂S*, *camphorsulfonate*, the *d*-isomer of *V* could not be sepd. with the aid of *l*-camphorsulfonic acid. Chas. Blaw

MANUKYAN, Z. K.

Dissertation: "Study of the Situation of Tuberculosis in Cattle and the Effectiveness of Conducting Antituberculosis Measures in the Kolkhozes of State Breeding Centers of Mountainous Regions." Cand Vet Sci, Yerevan Zooveterinary Inst, 28 Apr 54. (Kommunist, Yerevan, 10 Apr 54)

SO: SUM:243, 19 Oct 1954

1ST AND 2ND QUARTERS		PROCESSES AND PROPERTIES INDEX		3RD AND 4TH QUARTERS	
BC		R-3			
<p>Metallo-organic tin derivatives. S. N. NAUMOV and E. M. MAMONTOVA. <i>Ukr. Akad. Medits.</i>, 1937, (vi), 18. The compounds SnCl_4 and SnCl_2 in Et_2O are heated at 100°C for 24 hr. The SnCl_4 is distilled off, and the residue is heated at 100°C for 3 hr. to yield a white solid. The SnCl_2 is heated at 100°C for 24 hr. to yield a white solid. A mixture of such products is heated at 100°C for 24 hr. The resolution of the products was attempted. The results were unsuccessful.</p> <p>R. T.</p>					
ASM-51A METALLURGICAL LITERATURE CLASSIFICATION					
FROM SYNDICATE		FROM BOWERY			
10000 02	10000 02	10000 02	10000 02	10000 02	10000 02

MANUCKIN, Z. CA 17

ARTICLE AND 2ND COVER PROCESSES AND PROPERTIES INDEX 1ST AND 2ND COVER

COMMON ELEMENTS COMMON VARIANTS INDEX

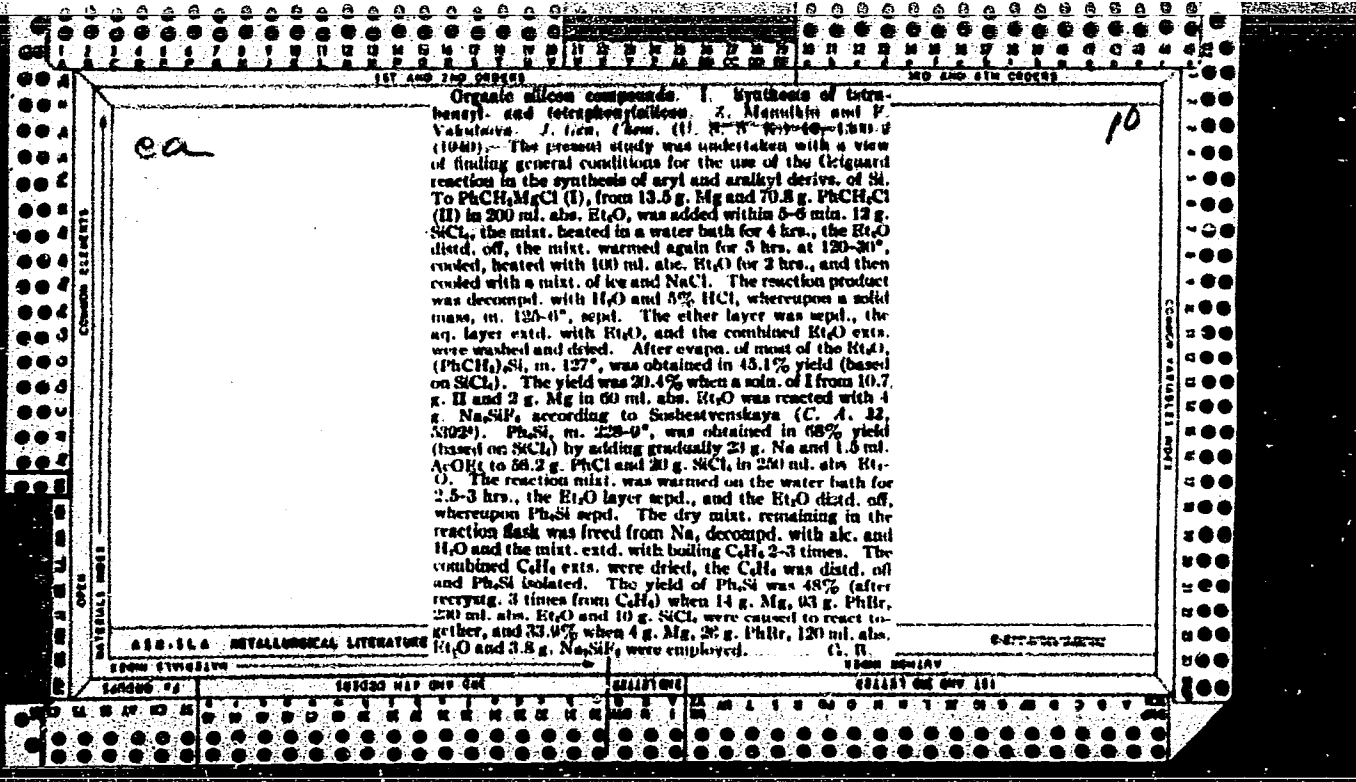
ARTICLE AND 2ND COVER PROCESSES AND PROPERTIES INDEX

45-5(1939).—The air-dry plant contains H₂O 9.7, EtO-sol. 5.6, H₂O-insol. 29.9 and EtOH-insol. substances 0.8, hemlocktannin 11.0, cellulose 8.5, lignin 9.6, pectin 9.2, ash 10.1 and tannins 2.4%. The essential oil contains α -pinene and camphor. B. C. P. A.

MATERIALS INDEX

45-5-55 A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED SERIALIZED FILED



PROCESSES AND PROPERTIES INDEX

10

Cleavage of radicals in metalloorganic compounds of metals of group IV. I. Cleavage of radicals by the action of iodine on compounds of the type R_4Sn . Z. M. Mannikin. *J. Gen. Chem.* (U. S. S. R.) 11, 386-9 (1941).—Reactions studied were those between I and tetramethyl-, tetraethyl-, tetrapropyl-, tetrabutyl- and tetraisoamyltin with the resulting formation of R_3Sn . The cleavage of 1 radical was easier the lighter the radical. In the cleavage of 2 and 4 radicals from Me_2Sn and Et_2Sn the 1st 2 radicals are split off stepwise and the remaining 2 radicals are split off simultaneously. B. Z. Kamich

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

COMMON ELEMENTS

COMMON VARIABLES INDEX

3RD AND 4TH COPIES

1ST AND 2ND COPIES

157 AND 158 COLUMNS PROCESSED AND REPROCESSED INDEX

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Cleavage of radicals in metallo-organic compounds of group IV. II. Cleavage of radicals by the action of I on mixed tetraalkyl Sn compounds of type R'SnR'. Z. M. Manuilkin. *J. Gen. Chem.* (U. S. S. R.) 13, 42-5 (1943) (in English, 45); cf. *C. A.* 35, 5854. — In continuation of previous work, M. investigated the cleavage of mixed tetraalkyl Sn compds. by iodine. BuBr (34.2 g.) was converted into BuMgBr, which was treated with 30 g. Me₂SnI, after which the mass was refluxed in Et₂O for 2 hrs., cooled, treated with water, then with HCl, the org. layer sep'd, and combined with the Et₂O ext. of the aq. layer; on distn. there was obtained Me₂BuSn, bp 149-50°, d₄²⁰ 1.1830, n_D²⁰ 1.4560, in 87% yield. Me₂AmSn, prep'd. analogously, bp 171-2°, d₄²⁰ 1.1586, n_D²⁰ 1.4559. Me₂(iso-Bu)Sn (prep'd. analogously, using iso-BuMgI), bp 140-1°, d₄²⁰ 1.1804, n_D²⁰ 1.4544. Me₂(iso-Am)Sn (using iso-AmMgI), bp 162-4°, d₄²⁰ 1.1305, n_D²⁰ 1.4470. Et₂BuSn (from BuMgBr), bp 99-101°, d₄²⁰ 1.1457, n_D²⁰ 1.4736. Me₂BuSn refluxed with iodine in Et₂O for 7 hrs., yielded MeI and 98% of Me₂BuSnI, bp 118-20°, d₄²⁰ 1.7817, n_D²⁰ 1.5478. Me₂AmSn treated with iodine as above for 8 hrs. gave MeI and 93% of Me₂AmSnI, bp 132-3°, d₄²⁰ 1.7192, n_D²⁰ 1.5440. Me₂(iso-Bu)Sn treated as above gave MeI and 91% of Me₂(iso-Bu)SnI, bp 95°, d₄²⁰ 1.7803, n_D²⁰ 1.5475. Me₂(iso-Am)Sn treated as above gave MeI and 86% of Me₂(iso-Am)SnI, bp 115°, d₄²⁰ 1.7027, n_D²⁰ 1.5410. Et₂BuSn treated as above for 10-11 hrs. gave EtI and 81% of Et₂BuSnI, bp 134-5°, d₄²⁰ 1.5485, n_D²⁰ 1.5460. III. Cleavage of radicals by the action of I on compounds of the type R'SnR'. *Ibid.* 48-50 (in English, 49-50). — Me₂SnI (30 g.) added to EtMgI (from 32.5 g. EtI) in Et₂O and heated for 2 hrs. to reflux, gave 90.9% of Me₂EtSn, bp 106°, n_D²⁰ 1.4627. Et₂PrSn (from Et₂SnI and PrMgBr), bp 103°, n_D²⁰ 1.4720. Pr₂BuSn (from BuMgBr and Pr₂SnI), bp 137-8°, d₄²⁰ 1.0917, n_D²⁰ 1.4741. Bu₂(iso-Am)Sn (from iso-AmMgBr and Bu₂SnI), bp 177-8°, d₄²⁰ 1.0400, n_D²⁰ 1.4715. Reactions with iodine were run according to Naumov and Manuilkin (*C. A.* 29, 5071⁴), yielding, in order (with yields from 95 to 87%): Me₂EtSnI, bp 78°, n_D²⁰ 1.5705; Et₂PrSnI, bp 132-4°, d₄²⁰ 1.7750, n_D²⁰ 1.5582; Pr₂BuSnI, bp 160-60°, d₄²⁰ 1.5624, n_D²⁰ 1.5323; Bu₂(iso-Am)SnI, bp 195°, d₄²⁰ 1.4310, n_D²⁰ 1.5254. There was also prep'd. MeEt₂Sn (from MeMgI and Et₂SnI), bp 159°, d₄²⁰ 1.2160, n_D²⁰ 1.4656, which with iodine in Et₂O gave 91.8% of Et₂SnI, bp 226-8°, bp 118°, n_D²⁰ 1.5653. Me(iso-Am)₂Sn (from MeMgI and (iso-Am)₂SnI), bp 138-40°, d₄²⁰ 1.0519, n_D²⁰ 1.4704, with iodine in xylene, gave 87% of (iso-Am)₂SnI, bp 178-9°, n_D²⁰ 1.5209. Thus, the ease of cleavage by iodination decreases in the order Me, Et, Pr, Bu, iso-Am.

G. M. Kosolapov

ASA-5LA METALLURGICAL LITERATURE CLASSIFICATION

157 AND 158 COLUMNS

MANULKIN, Z. M.

"Cleavage of radicals in organometallic compounds of Group IV. III. The cleavage of radicals by the action of iodine on compounds of the type R'_3SnR ." Manulkin, Z. M. (p. 49)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1943, Volume 13, no. 1-2.

Cleavage of radicals in metallo-organic compounds of metals of group IV. IV. Cleavage of radicals by reaction of iodine with compounds of the types R_2Sn and R_3SnR' . Z. M. Manalkin (Tashkent Pharm. Inst.). *J. Gen. Chem. (U.S.S.R.)* 14, 1047-53 (1944); cf. *C.A.B. J. Gen. Chem.* (U.S.S.R.) 14, 1047-53 (1944); cf. *C.A.B. J. Gen. Chem.* (U.S.S.R.) 14, 1047-53 (1944). Previous work showed that the reaction, $R_2Sn + I_2 \rightarrow R_2SnI + RI$ (where R was a normal alkyl group contg. 1-8 C atoms) proceeded less readily with increasing no. of C atoms in R. This rule has now been shown to hold for the next 2 higher members of the series in which R contained, resp., 7 and 8 C atoms. Only slight differences were observed between $(n-C_7H_{15})_2Sn$ (I) and $(n-C_8H_{17})_2Sn$ (II) with respect to their reactivity with I_2 to form, resp., $(n-C_7H_{15})_2SnI$ (III) and $(n-C_8H_{17})_2SnI$ (IV). Thus both I and II failed to react with I_2 in boiling ether, reacted slowly in boiling benzene and reacted fairly rapidly in boiling toluene and xylene, the reaction being complete after refluxing for several hrs. in the latter solvent, when approx. 60% of the theoretical amts. of III and IV were isolated. Other expts. revealed that (1) with $Bu_2(n-C_8H_{17})Sn$ (V), the lower alkyl group

was split off more readily, forming $Bu_2(n-C_8H_{17})SnI$ (VI); (2) with $Bu_2(sec-Bu)Sn$ (VII), the *sec*-alkyl group was eliminated, forming Bu_2SnI (VIII); (3) with $(iso-Am)_2(n-C_8H_{17})Sn$ (IX), the lower, branched-chain alkyl group was removed, forming $(iso-Am)_2(n-C_8H_{17})SnI$ (not isolated in pure form); and (4) with $(iso-Pr)_2SnEt_2$ (X), conflicting evidence as to the course of the reaction was obtained with indications of simultaneous formation of both Et_2SnI and $Et_2(iso-Pr)SnI$, neither of which was isolated. The reactions of V, VII, IX, and X with I_2 were carried out by refluxing for several hrs. in xylene. Isolation of III, IV, VI, and VIII and also of various alkyl iodides formed as by-products was accomplished by fractional distn. of the corresponding reaction mixts. Attempts to prep. II by reacting *n*-octyl iodide with $Sn-Na$ alloy failed. Both I and II were prepd., in 89% and 59% yields, resp., by reacting $SnCl_4$ with the corresponding Grignard reagent, $RMgBr$, first at room temp. in dry ether, then heating on the water bath to distill off the ether, and finally at 130-40° for 5-10 hrs. The Grignard reaction was also used to synthesize V, VII, IX, and X, by reacting, resp., Bu_2SnI (XI) with $n-C_8H_{17}MgBr$, XI with *sec*- $BuMgBr$, $(iso-Am)_2SnI$ with $n-C_8H_{17}MgBr$, and Et_2SnI with $iso-PrMgBr$. Yields of 78% or better were obtained in these reactions. In working up the reaction mixt. to isolate X, a by-product was obtained which was sol. in alc. and also in water to produce an alk. reaction, m. 42°, and was thought to be Et_2SnOH . The phys. consts. for the various compds. were as follows: I b₂ 210-21°, n_D²⁰ 1.4702, d₄²⁰ 0.9746; II b₂ 250-5°, n_D²⁰ 1.4681; III b₂ 235-40°, n_D²⁰ 1.4732; IV b₂ 215-20°, d₄²⁰ 1.3205, n_D²⁰ 1.5181; V b₂ 165°, d₄²⁰ 1.035, n_D²⁰ 1.4762; VI b₂ 180°, d₄²⁰ 1.403, n_D²⁰ 1.5240; VII b₂ 143-4°, d₄²⁰ 0.9485, n_D²⁰ 1.4790; VIII b₂ 168°, n_D²⁰ 1.5345; IX b₂ 158-60°, d₄²⁰ 1.0030, n_D²⁰ 1.4698; X b₂ 192-4°, d₄²⁰ 1.1733, n_D²⁰ 1.4772. J. W. Perry

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PROCESSES AND PROPERTIES INDEX

Cleavage of radicals in metallo-organic compounds of group IV. V. Cleavage of radicals by action of hydrogen chloride and mercury sublimate on compounds of type R₂M, where M is tin, lead, or silicon. Z. M. Manulkin (Tashkent Pharm. Inst.). J. Gen. Chem. (U.S.S.R.) 16, 235-42 (1946); cf. preceding abstr.—Dry HCl acting on Me₂Sn and Me₂EtSn in boiling CHCl₃ leads to the cleavage of the smaller radical, though showing a similarity of action of HCl to the cleaving action of iodine (C.A. 36, 332¹). HgCl₂ is a more active cleaving agent, with tetraalkyl tin compds., than HCl, also with the lightest radical being cleaved preferentially. Me₂Sn (5 g.) in 40 cc. CHCl₃, heated to boiling and treated over 4 hrs. with dry HCl, yielded mostly Me₂SnCl₂, b. 152-4°, m. 37-8° (from petr. ether) (70%). Similarly, Me₂EtSn gave 80% Me₂EtSnCl₂, b. 106-8°, d₄²⁰ 1.4024, n_D²⁰ 1.5082. HgCl₂ (12 g.) in 50 cc. hot abs. EtOH was cooled and treated with 8 g. Me₂Sn; vigorous reaction occurred and the mass solidified to a voluminous flaky solid, m. 170-1°, apparently MeHgCl; the mat. was heated for 3 hrs. and cooled, when the redissolved solid came out again to yield 83% MeHgCl, while the filtrate on distn. gave 70% Me₂SnCl₂ and 12.5% Me₂SnCl₂, m. 107-8°, b. 185-90°. HgCl₂ (9 g.) and 3 g. Me₂Sn gave 89% MeHgCl and 80% Me₂SnCl₂. Heating 16 g. HgCl₂ with 13.8 g. Et₂Sn in EtOH for 3 hrs. on a steam bath gave some unreacted Et₂Sn and 35% Et₂SnCl₂, b. 135°, while the residue on crystn. from EtOH gave 58% EtHgCl and 10% Et₂SnCl₂, m. 84-6° (from petr. ether).

The result was the same when CHCl₃ was used for solvent. Heating 3 g. HgCl₂ and 6 g. tetraoctyltin in EtOH for 2 hrs. gave 44% octylmercury chloride, m. 105-7°, and (C₈H₁₇)₂SnCl₂, m. 84-6° (from petr. ether). HgCl₂ (7 g.), 35 cc. EtOH, and 5 g. Me₂EtSn, heated for 2 hrs. on a steam bath, yielded 76% MeHgCl and 81% Me₂EtSnCl₂. Me₂Et₂Sn, prepd. in 63% yield from MeMgI and Et₂SnCl₂, b. 131-2°, n_D²⁰ 1.4050; this (3.0 g.) and 7.9 g. HgCl₂, heated for 2-3 hrs. in EtOH gave 91% MeHgCl and 85% Et₂SnCl₂. HgCl₂ (6.7 g.) in 30 cc. hot abs. EtOH was cooled and treated with 8 g. Et₂Pb, then heated for 1 hr. to give 92% EtHgCl and 37% Et₂PbCl₂, m. 165-7° (from petr. ether). EtMgBr (from 144 g. EtBr) was treated with 30 g. Na₂S₂O₈ and heated for 2-3 hrs. on a steam bath; after removal of the Et₂O residue, heated to 140-60° for 2-4 hrs., gave 23% Et₂Sn, b. 150-1°, n_D²⁰ 1.4231, d₄²⁰ 2.7060. This (1.8 g.) and 3.8 g. HgCl₂, heated for 2 hrs. at 140-50°, yielded 15% EtHgCl although the isolation of a S₂ deriv. was unsuccessful. Boiling HgCl₂ in EtOH with Ph₂Si, Et₂Si, and (PhCH₂)₂Sn failed to result in reaction. C. M. Kosolapoff

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A.S.B.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

SECTION DIVISION

SUBJECT

COLLECTION

QUALITY CONTROL

MANULKIN, Z. M.

PA 68T37

USSR/Chemistry - Organic Compounds, Metallo Feb 1948
Chemistry - Radicals

"The Problem of the Separation of Radicals in Metal-organic Compounds of the Metals of Group IV. VI. Separation of the Radicals by the Reaction of Aluminum Chloride and Ferric Chloride on Compounds of the Type R_3Me , Where Me Is Equal to Si, Sn or Pb," Z. M. Manulkin, Lab Org Chem, Cen Asiatic State U and Tashkent Pharmaceutical Inst, 6½ pp

"Zhur Obshch Khim" Vol XVIII (LXX), No 2

Aluminum chloride is a more active disintegrating agent than ferric chloride. Aluminum chlorides, when acting on compounds of the R_3Me type, form aluminum organic compounds. Submitted 4 Apr 1947.

68T37

PROCESSES AND PROPERTIES INDEX

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Ch

Cleavage of radicals from organometallic compounds of metals of group IV. VI. Cleavage of radicals by aluminum chloride and ferric chloride in compounds R_3Me , where Me is Si, Sn, or Pb. Z. M. Manulkin (Tashkent Pharmaceut. Inst.). *J. Gen. Chem. (U.S.S.R.)* 18, 200-205 (1948) (in Russian); cf. C.A. 41, 90c.—Ph₃Si (5 g.) in 30 ml. CHCl₃ was slowly treated with 8 g. AlCl₃ and the soln. let stand 10-12 hrs.; careful distn. gave some SiCl₄ (hydrolysis gave 1.7 g. SiO₂), while the residue was distd. with steam, giving 67% C₆H₆, identified as *m*-(O₂N)₂C₆H₄; use of 20% excess AlCl₃ gave 79% C₆H₆. Similar treatment of 10 g. Et₃Si with 37.3 g. AlCl₃ in CHCl₃ gave 44% SiCl₄ and C₆H₆. Addn. of 8 g. AlCl₃ to 6 g. Ph₃Sn in 32 ml. CHCl₃ and standing 7 hrs., after which the solvent was distd., yielded SnCl₄ and 79% C₆H₆ (identified as above); similarly, Et₃Sn gave 71% Et₂SnCl₂, m. 85°, while the use of Bu₃Sn gave 22% Bu₂SnCl₂, b₁ 145-7°, d₄²⁰ 1.2105, n_D²⁰ 1.4008, and 28.5% BuSnCl₂, b₁ 183-6°, m. 41-2°. Et₃Pb (15.7 g.) in 25 ml. CHCl₃, treated in a N atm. with 26 g. AlCl₃, let stand 24 hrs., and decompd. with H₂O and 5% HCl with cooling, gave 81% PbCl₂. Et₃Si (12.4 g.) in 30 ml. CHCl₃, treated with 59 g. FeCl₃ and allowed to stand 15 hrs. gave, on distn. in a N atm., 21% Et₂SiCl₂, b_{ms} 138-41°. Et₃Sn (10 g.) in 25 ml. CHCl₃, treated with 43.9 g. FeCl₃ and allowed to stand overnight, followed by heating 5 hrs. on a steam bath in a N atm., gave 68% Et₂SnCl₂. Similarly, Bu₃Pb gave 36% Bu₂PbCl₂, b_{ms} 147-9°. Et₃Pb (15 g.) and 30.1 g. FeCl₃ in 20 ml. CHCl₃, after 4 hrs. on a steam bath in a N atm., followed by treatment with H₂O and dil. HCl with cooling, gave 61% PbCl₂; use of excess FeCl₃ gave a 60% yield.

G. M. Kosolapoff

COMMON ELEMENTS
OPEN MATERIALS INDEX

MANULKIN Z. M.

IA 170722

Nov 50

USSR/Chemistry - Organo-Metallic Compounds

"Problem of Splitting Radicals in Organo-Metallic Compounds of Group IV. VII. Splitting Off of Radicals by the Action of Bismuth Trichloride on Compounds of the Type R₄Me, Where Me = Si, Sn, Pb," Z. M. Manulkin, Lab of Org Chem, Tashkent Phar Inst

"Zhur Obshch Khim" Vol XX, No 11, pp 2004-2008

Tetra-alkyl compounds of Si, Sn, and Pb were de-alkylated both in ether and without solvent with Bi trichloride. Latter is less active dealkylator

170722

Nov 50

USSR/Chemistry - Organo-Metallic Compounds (Contd)

than chlorides of Fe, Al, or Hg. Lightest radical is split off in the reaction. Reaction does not depend on the solvent; and the more complex the molecule, the higher the temperature required.

170722

10

CA

Cleavage of radicals from metallo-organic compounds of group IV. VII. Cleavage of radicals under the influence of bismuth trichloride on compounds R_3M , where M is silicon, tin, or lead. Z. M. Manuilkin (Tashkent Pharm. Inst.); *Zhur. Obshchei Khim.* (J. Gen. Chem.), 20, 2004-8 (1950); cf. C. A. 42, 6742f. $BiCl_3$ dealkylates R_3M (M = Si, Sn,

Pb) less actively than $AlCl_3$, and is close to $HgCl_2$, the smallest radicals are cleaved first and the temp. is an important factor. $BiCl_3$ does not attack $(PhCH_2)_3Si$ in alc. at reflux temp., but refluxing 0.09 mole Et_3Si with 0.03 mole $BiCl_3$ 12 hrs. in N gave 3.1 g. Et_2SiCl , b. 139-41°, and a small amt. of crystals, m. 95°. Refluxing 10 g. Et_3Si with 42 g. $BiCl_3$ in $CHCl_3$ 3 hrs., and letting stand overnight, gave 5 g. Et_2SiCl , b.p. 200-5°, and 1 g. $EtSiCl_2$, m. 81°. Similarly, Bu_3Si heated with $BiCl_3$ 6 hrs. at 120° gave 3 g. Bu_2SiCl , m. 44-5°; no reaction took place in hot Et_3O or $EtOH$ between $BiCl_3$ and Pr_3BuSi , but at 120° 37% $Pr_2BuSiCl$, m. 67-8° was obtained. In a similar manner, 10 g. Et_3Pb mixed with 13 g. $BiCl_3$ in a N atm. evolved heat and letting stand overnight, filtering, and treating with H_2O gave 3.0 g. $PbCl_2$ and 1.5 g. Et_2PbCl , which colors at 118-21°.

G. M. Kosolapoff

Pa. 173133

MANULKIN, Z., M.,

USSR/Chemistry - Organometallic Compounds Jan 51

"Question of Splitting Off of Radicals in Organometallic Compounds. VIII. Splitting Off of Radicals by Action of Aluminum Chloride and Ferric Chloride on Triphenylbismuth and Triphenylantimony," Z. M. Manulkin, A. N. Tatarenko, Lab Org Chem, Tashkent Phar Inst

"Zhur Obshch Khim" Vol XXI, No 1, pp 93-98

Aluminum chloride actively dearylates triphenylbismuth and triphenylantimony in chloroform, with splitting off of 3 radicals; org Al compd are formed in case of triphenylbismuth. Reaction proceeds more easily for Bi

173133

USSR/Chemistry - Organometallic Compounds Jan 51 (Contd)

compd than Sb compd, confirming greater strength of Sb-C than Bi-C bond. Ferric chloride dearylates triphenylbismuth in chloroform less actively than aluminum chloride but does not dearylate triphenylantimony: Oxidation-reduction process occurs here. Triphenylbismuth behaves like tetraethyllead, showing similar strength of Bi-C and Pb-C bonds.

173133

2A

Cleavage of radicals from metalloorganic compounds VIII. Cleavage of radicals by action of aluminum chloride and ferric chloride on triphenylbismuth and triphenylantimony. Z. M. Manulkin and A. N. Tatarenko. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 31, 83-8 (1951); cf. C.A. 45, 5011t. Abstr. of 20 g. BiCl_3 suspended in Et_2O to Ph_3MgBr (from 10 g. PhI_2) in 150 ml. Et_2O , refluxing 3 hrs., distn. of the Et_2O , heating 3 hrs. to 160° , and decompn. with ice water and Et_2O (with NH_4Cl) gave 82% Ph_2Bi , m. $75-81^\circ$. This (4.4 g.) in CHCl_3 treated over 0.5 hr. with 2 g. AlCl_3 and heated 6 hrs. on a steam bath in a N atm. gave a violet liquid and a yellow ppt. Treatment with H_2O yields C_6H_6 , indicating the formation of PhAlCl_2 and BiCl_3 . Evapn. of the CHCl_3 soln. gave a voluminous white ppt. which burns with a smoky flame, while the yellow ppt. readily yields 80% BiCl_3 , m. 230° . Use of 7 g. AlCl_3 in the above reaction, followed by H_2O treatment, acidification, and steam distn. gave C_6H_6 , BiOCl , but no Ph_2CHCl or Ph_2CCl . Similar reaction of 3.5 g. Ph_3Sb with 1.5 g. AlCl_3 failed to give any C_6H_6 on hydrolysis, while SbOCl was readily detected, as well as small amts. of Ph_2SbCl , m. 67° , and PhSbCl_2 , m. 57° . When AlCl_3 was raised to 3-molar ratio, the main product was SbCl_3 , isolated as SbOCl ; no products of partial cleavage or any org. derivs. were found.

4 moles AlCl_3 gave similar results, as did the use of a N atm. during the reaction. If heating is omitted, 50% SbOCl is isolated, along with considerable Ph_2SbCl_2 , m. 141° . Heating 4.4 g. Ph_2Bi with 2.5 g. FeCl_3 in CHCl_3 5-6 hrs. on a steam bath gave much BiCl_3 and inorg. Fe compds., as well as traces of C_6H_6 . If 8.5 g. FeCl_3 is used, 40% BiCl_3 is formed, other results being analogous to the above. Similar reaction of 3.5 g. Ph_2Sb with 5 g. FeCl_3 in CHCl_3 gave some FeCl_3 and Ph_2SbCl_2 , isolated as the dihydrate, m. 210° (95%). Hence AlCl_3 readily cleaves Ph_2Bi , but the action of Ph_2Sb is much weaker. FeCl_3 is less active than AlCl_3 and its reaction with Ph_2Sb involves not radical cleavage but oxidation-reduction. The behavior of Ph_2Bi resembles that of Et_2Pb . G. M. Kosolapoff

2957

MANUEKIN, Z. M.

chem

Chem. Abstr.
v. 48,
Mar 10, 1954
organic chem.

Synthesis of new antimony-organic compounds of type
Ar₂SbR, where R is an aliphatic, aromatic or alicyclic
radical. Z. M. Manuekin, A. N. Tatarenko, and F. Yu.
Yusubov (Tashkent Chem. Inst.). Doklady Akad. Nauk
S.S.S.R. 88, 687-90(1953).—Prepn. of Ph₂SbCl from
Ph₂Pb and SbCl₃ (Goddard, *et al.*, C.A. 16, 2855) yields
the product as an oil; only after distn. *in vacuo* is it possible
to obtain a solid material, m. 68°. The yield in this reaction
is low. A better method follows. Ph₂Sn and SbCl₃
were heated and the product treated with MeOH and
filtered; after 24 hrs. the filtrate readily yielded Ph₂SbCl,
m. 67-8°, which with RMgX gave some 75% yields of
Ph₂SbR [R, b.p./mm., d, n_D, μ (ergs/sq. cm.), and, in
parentheses, ϵ shown]: Bu, 188-93°/0-7, 1.3810, 1.0180,
44.7 (29°); *iso*-Bu, 180-5°/8-9, 1.3090, 1.6278, 41.48
(27°); *iso* pentyl, 195-200°/8-9, 1.3770, 1.6319, 40.7
(29°); PhCH₂, 224-5°/15-17, 1.3440, 1.6510, 40.8 (31°);
C₆H₁₁, 213-16°/7-8, 1.3720, 1.6351, 43.25 (29°). (C₆H₁₁)₂-
Sb, b₁₁₋₁₂ 206-9°, was prepd. from RMgBr and SbCl₃.
The Grignard reactions were run in an inert atm. The
products of the type Ar₂SbR were liquids which turned to
solids on standing owing because of radical disproportiona-
tion, which is accelerated by contact with air. (C₆H₁₁)₂Sb
in contact with air is oxidized with evolution of heat and
formation of a surface film; the oxidation product appears
to be mixed R₂SbO and R₂SbO.Sb₂O₃. In all the Grignard
reactions listed above there was always found a by-product
corresponding to R₂, derived from RMgX.

MT

G. M. Kosolapoff

Diphenylchlorostibine was prepd from (C₆H₅)₂Sn and SbCl₃. This compd was
then treated with the appropriate Grignard reagent to yield (C₆H₅)₂SbR, where
R = n-butyl, iso-butyl, iso-amyl, benzyl, and cyclohexyl. Tricyclohexylstibine
was prepd from the Grignard reagent and SbCl₃.

256T19

MANULKIN, Z. M.; TATARENKO, A. N.; and YUSUPOV, F.

Concerning the Splitting Off of Radicals in Organo-Metallic Compounds. IX.
Splitting Off of Radicals by Action of Bismuth Trichloride on $(C_6H_5)_nMe$
(wherein Me = Bi, Sb, Hg). page 1308, *Sbornik statey po obshchey khimii*
(Collection of Papers on General Chemistry), Vol II, Moscow-Leningrad, 1953,
pages 1680-1686.

Laboratory of Organic and Pharmaceutical Chemistry, Tashkent Pharmaceutical Inst

MANULKIN, Z. M.

USSR/Chemistry

Card : 1/1

Authors : Yusupov, F. Yu., and Manulkin, Z. M.Title : Synthesis of new antimony organic compounds of the $(C_6H_5)_2 Sb-C_6H_4X$ -type, where X - the substituent in the nucleus

Periodical : Dokl. AN SSSR, 97, Ed. 2, 267 - 268, July 1954

Abstract : The synthesis of several hitherto unknown antimony organic compounds of the $(C_6H_5)_2 Sb-C_6H_4X$ -type, where X is the substituent in the nucleus, is described. The synthesis of these new compounds was carried out by the Grignard reaction at normal conditions. The compounds, after distillation in vacuum, represent viscous oily liquids of yellowish color, with the exception of dihenylphenetylstibine which is rose-colored. These new substances do not change under the effect of air, they do not submit to acidification or disproportionation as in the case of fatty-aromatic and alicyclic-aromatic series. Five references. Tables.

Institution : The Pharmaceutical Institute, Tashkent

Presented by : Academician A. N. Nesmeyanov, April 2, 1954

02
Name: MANULKIN, Zei'man Mendelevich

Dissertation: Reactions of Dialkylation and Deary-
lation in a number of Metallic Organic
Compounds

Degree: Doc Chem Sci

Affiliation: Tashkent Pharmaceutical Inst

Defense Date, Place: 21 Jun 56, Council of Inst of Element-
Organic Compounds

Certification Date: 12 Jan 57

Source: BMVO 7/57

MANULKIN, Z.M., dotsent; TATARENKO, A.N., dotsent

Industrial practice in pharmaceutical chemistry at the Tashkent
Pharmaceutical Institute. Apt.delo 5 no.4:32-33 J1-Ag '56.

(MIRA 9:9)

1. Zaveduyushchey kafedroy farmatsevticheskoy khimii (for Manulkin)
(TASHKENT--CHEMISTRY, MEDICAL AND PHARMACEUTICAL)

MANULKIN, Z.M.

~~Development of the chemistry of organometallic compounds in~~
Uzbekistan. Izv. AN. Uz. SSR. Ser. khim. nauk no.4:73-78 '57.

(MIRA 11:9)

(Uzbekistan--Organometallic compounds)

MANULKIN, Z.M.

Investigation of the decomposition products of chloroform in
reactions with organometallic compounds. Uzb. khim. zhur. no.2:
68-72 '59. (MIRA 12:7)

1. Tashkentskiy farmatsevticheskiy institut.
(Organometallic compounds) (Chloroform)

MANULKIN, Z.M., doktor khim.nauk

Academician Aleksandr Nikolaevich; on his 60th birthday. Uzb.
khim.zhur. no.5:3-5 '59. (MIRA 13:2)
(Nesmeianov, Aleksandr Nikolaevich, 1899-)

MANULKIN, Z.M.

Dearylation of tetraphenyltin and tetraphenyllead by iodine
trichloride. Uzb. khim. zhur. no.2:66-68 '60. (MIRA 14:3)

1. Tashkentskiy farmatsevticheskiy institut.
(tin) (Lead) (Iodine chloride)

S/081/62/000/010/048/085
B168/B180

AUTHORS: Snegur, L. N., Manulkin, Z. M.

TITLE: Synthesis of new aliphatic-aromatic organotin compounds of the $(C_6H_5)_2SnR_2$ and $(C_6H_5)_3SnR$ type, where R is n-heptyl, n-octyl, n-nonyl, n-decyl

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 272-273, abstract 10Zh538 (Uzb. khim. zh., no. 1, 1961, 49-54)

TEXT: During searches for fungicides for the cotton plant heat-stable forms of $(C_6H_5)_2SnR_2$ (I, where R is alkyl of normal structure) and forms of $(C_6H_5)_3SnR$ which are partially symmetrized by distillation (II) were synthesized by Grignard's reaction. 10 mmoles of dry $(C_6H_5)_2SnI_2$ is gradually mixed into a warm solution of $n-C_7H_{15}MgBr$ (from 0.042 g-atom Mg) in 30 ml ether, the mixture is boiled for 2 hours, the ether distilled off, the residue heated for 1.5 hours at 100-110°C, ether is added, the

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mixture is broken down first with cold water then with 1% HCl, and I (R = C₇H₁₅) is isolated. Yield 74.4%, boiling point 251-252°C/6 mm, n²⁰_D 1.5359, d₄²⁰ 1.078, σ₂₀ 28.6 erg/cm². The remaining forms of I were synthesized by similar methods (also given here are R, yield in %, boiling point in °C/mm, n²⁰_D, d₄²⁰, σ₂₀: C₈H₁₇, 68.2, 252/4, 1.5258, 1.0670, 27.26; C₉H₁₉, 84.9, 241-242/2, 1.5160 (60°C), 1.032 (60°C), 27.35 (60°C); C₁₀H₂₁, 75, 270-275/4-5, 1.5108, 1.0330, 32.44. By the same method II (R = C₇H₁₅), 28.6, 230-232/2-3, 1.5286 (60°C), 1.0785 (60°C), 23.24 and II (R = C₉H₁₉), 26.6, 250-255/2-3, 1.5530 (30°C), 1.096 (50°C), 27.08 (50°C) were obtained from (C₆H₅)₃SnI. [Abstracter's note: Complete translation.]

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S/081/62/000/010/047/065
B168/B180

AUTHORS: Tillyayev, K. S., Manulkin, Z. M.

TITLE: Synthesis of new unsaturated organometallic compounds of tin

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 272,
abstract 10Zh336 (Uzb. khim. zh., no. 5, 1961, 73-78)

TEXT: $(n-C_3H_7)_2SnRR'$ (Ia-e, where a) $R = n-C_3H_7$, $R' = CH_2 = CHCH_2$;
b) $R = R' = CH_2 = CHCH_2$; c) $R = CH_2 = CHCH_2$, $R' = I$; d) $R = n-C_3H_7$,
 $R' = p-C_6H_4CH_2CH = CH_2$; e) $R = R' = p-C_6H_4CH_2CH = CH_2$) were synthesized
from $(n-C_3H_7)_2SnI_2$ (II) or $(n-C_3H_7)_3SnI$ (III) and the corresponding $RMgX$.

The original substance, its quantity in moles, the quantity of $RMgX$ in
moles, the heating time in hours, the reaction product, its yield in %,
boiling point in $^{\circ}C/4-5$ mm, n_D^{20} , d_4^{20} , σ_{20} are enumerated: III, 0.032,
0.048, 2-3, Ia, 51, 101-103, 1.4972, 1.1897, 27.61; II, 0.026, 0.105,
4-5, Ib, 48, 95-97, 1.4880, 1.1362, 28.84; II, 0.026, 0.052, 0, Ic, 49,

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Synthesis of new unsaturated ...

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125-128, 1.5732, 1.6431, 31.93; III, 0.027, 0.04, 3-4, Id, 54.4,
172-175, 1.5332, 1.1847, 30.6; II, 0.019, 0.058, 3-4, Ie, 61, 191-193,
1.555, 1.3034, 28.48. Infrared spectrum data and parachor values for
substances obtained are given. [Abstracter's note: Complete translation.]

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YUSUPOV, F.Yu.; MANULKIN, Z.M.

Synthesis of diphenyl-p-allylphenylstibine and chemical characteristics of tertiary stibines of the type $(C H) S b C H X$ where X is a substituent in a ring. Zhur. ob. khim. 31 no. 11:3757-3761 N '61.
(MIRA 14:11)

1. Tashkentkiy farmatsevticheskiy institut.
(Stibine)

ANIZOV, M.A.; MANULKIN, Z.M.; TATARENKO, A.N.

Tashkent Pharmaceutical Institute is 25 years old. Uzb.khim.
zhur. 6 no.5:87-88 '62. (MIRA 15:12)

1. Tashkentskiy farmatsevticheskiy institut.
(~~TASHKENT-PHARMACY-STUDY AND TEACHING~~)