

8(1,2,5)

PHASE I BOOK EXPLOITATION

SOV/1990

Sergeyev, Ivan Ivanovich and Mikhail Valentinovich Shklyarskiy

Uchebnoye posobiye elektromekhanika (A Textbook on Electromechanics) Moscow, Voen., izd-vo M-va obor. SSSR, 1958. 284 p. No. of copies printed not given.

Ed.: V. L. Sterligov, Engineer-Captain; Tech. Ed.: A.T. Babochkin.

PURPOSE: This book was approved as a textbook for junior technical personnel of the Red Army Signal Corps by the Chief of Ground Communications Personnel.

COVERAGE: The book describes the basic sources and converters of electric power employed for supplying radio-communication and wire-communication equipment. It is presumed that the reader is acquainted with the fundamentals of electrical engineering. The book provides technical specifications and data essential for proper selection of the supply source and for making operational calculations. The chapter dealing with internal combustion engines describes the construction, principle of operation and rule for operating the machines most commonly used in power supply installations of communications facilities. Chapters 1-3 and 8-11 were written by M.V.

Card 1/8

SHKLYARSKIY, N.D.

Bring the complex under control. Stroil. truboprov. 9 no.8:  
10-11 Ag '64. (MIRA 17:12)

1. Stroitel'noye upravleniye No.4 tresta Ukgazneftestroy, Kiyev.

VESTEL', A.N. (Kiyev); SHALYARSKIY, N.D. (Kiyev); KHMELYUK, A.I. (Kiyev)

Changing the structure of an area to service the "christmas tree"  
gas wells. Stroil. truboprov. 9 no.10:28 0 '64. (MIRA 18:7)

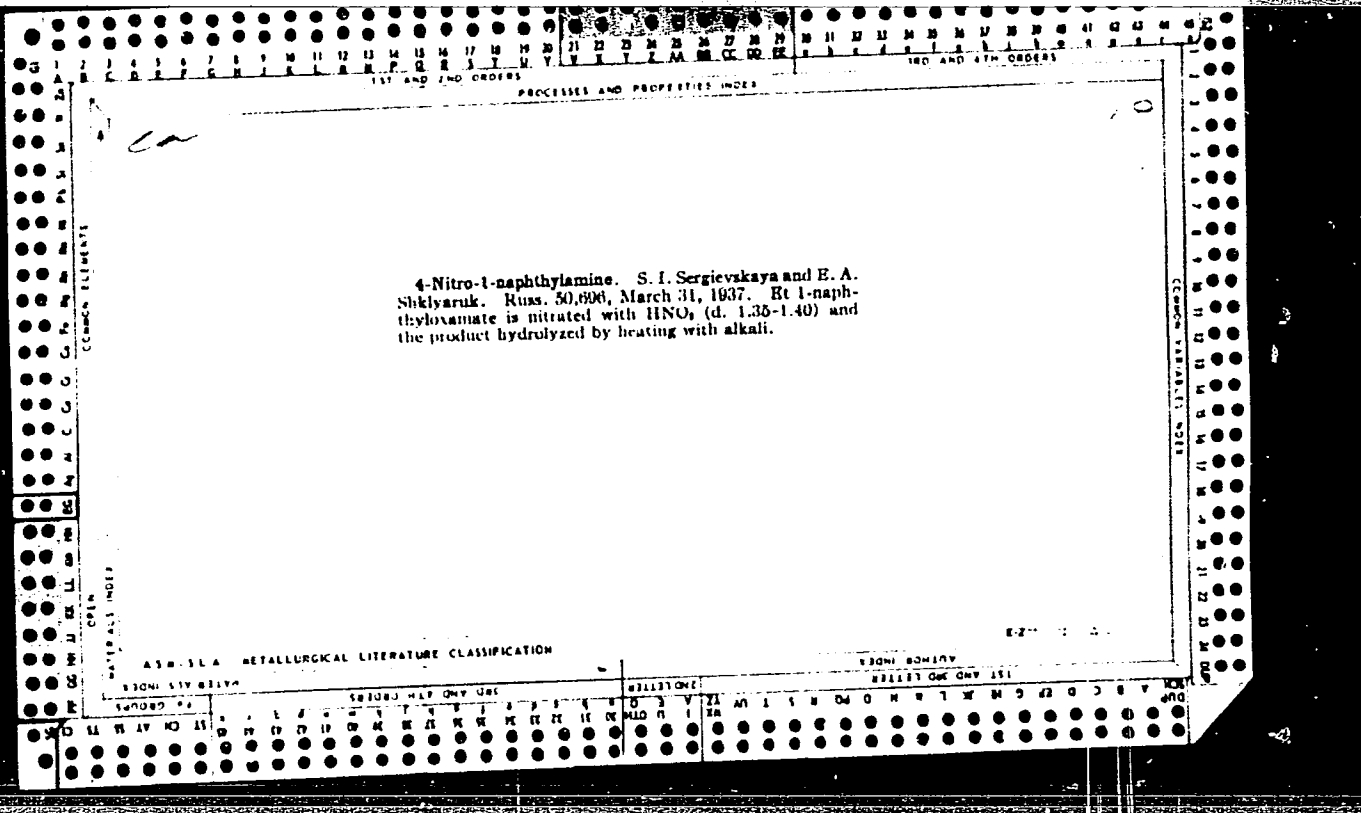
1. Rabotniki SU-4 tresta Urganzheftstroy.

KARAKASHLY, N. I.; [unclear], A., [unclear].

Transportation of the rolling stock of railroads on the lighter "Ishim-  
bay." Mor. file no. [unclear] 166. (SIRA 16.7)

KARAKASHLY, H., inzh.; SHKLYARUK, A.

A small seagoing tug. Mor. flot 25 no.10:37-38 0 '65.  
(MIRA 18:11)



ca

10

PROCESSES AND PROPERTIES INDEX

Oxidation of aliphatic amines. III. Behavior of diethylamine toward oxidizing agents. V. S. Svirnov and K. A. Shklyaruk. *J. Gen. Chem. (U.S.S.R.)* 16, 1443 N (1946) (In Russian); cf. *C.A.* 34, 730<sup>1</sup>.—Oxidation of Et<sub>2</sub>NH by 30% H<sub>2</sub>O<sub>2</sub> leads to formation of EtOAc, AcOH, NH<sub>3</sub>, and MeC(:NOH)OH (I); the expts. were conducted with spontaneous heating, followed by heating on a steam bath 12 hrs. Supersonic vibrations failed to bring about any change in an aq. soln. of Et<sub>2</sub>NH up to 1 hr. When a stream of O was bubbled through the soln. in the presence of Cu ("Naterkupfer C") at room temp. the odor of Et<sub>2</sub>NH disappeared after 32 hrs.; the products were: AcOH, NH<sub>3</sub>, and I. Oxidation by 2% KMnO<sub>4</sub>, with heating on a steam bath 24 hrs., gave the same products, plus EtOH. For the H<sub>2</sub>O<sub>2</sub> oxidation, a two-path reaction scheme is proposed: (1) formation of MeCH:NOH, which goes over either into MeCN and AcOH, or into I, and (2) formation of EtOH, which is oxidized to AcH, then to AcOH, the latter, with EtOH, yielding EtOAc. In oxidation by KMnO<sub>4</sub> or O over Cu the scheme is similar except for the absence of the esterification step. The final products of oxidation of I are, successively, MeCH:-NOOH acid and EtNO<sub>2</sub>.  
G. M. Kosolapoff

AS B-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST LETTER	2ND LETTER	3RD LETTER	4TH LETTER	5TH LETTER	6TH LETTER	7TH LETTER	8TH LETTER	9TH LETTER	10TH LETTER	11TH LETTER	12TH LETTER	13TH LETTER	14TH LETTER	15TH LETTER	16TH LETTER	17TH LETTER	18TH LETTER	19TH LETTER	20TH LETTER

10

PROCESSES AND PROPERTIES INDEX

7 Oxidation of aliphatic amines. IV. Behavior of 1-diethylamino-3-butanone toward oxidizing agents. V. S. Smirnov and E. A. Shklyaruk. *J. Gen. Chem.* (U.S.S.R.) 16, 1687-92 (1947); *Eng. Chem. Anal.* 21, 543-55. The following scheme was developed for 1-diethylamino-3-butanone on the basis of a variety of oxidative conditions:

$$\begin{array}{l}
 \text{MeCOCH}_2\text{CH}_2\text{NEt}_2 \rightarrow \text{MeCOCH}_2\text{CHO} \rightarrow \text{MeCOCH}_2\text{CO}_2\text{H} \rightarrow \text{CO}_2 + \text{Me}_2\text{CO} \\
 \downarrow \\
 \text{HNEt}_2 \rightarrow \text{MeCH}(\text{NOH})\text{CH}_2 \rightarrow \text{MeCH}(\text{NOH})\text{CHO} \rightarrow \text{MeC}(\text{NOH})\text{CH}_2\text{NO}_2 \rightarrow \text{EtNO}_2 \\
 \downarrow \\
 \text{MeCH}_2\text{OH} \rightarrow \text{MeCHO} \rightarrow \text{AcOH} \\
 \downarrow \\
 \text{EtOAc}
 \end{array}$$

Et<sub>3</sub>NH (38.5 g.) was treated, with stirring and cooling, with 15% HCl to Congo red acid reaction, the mixt. was evapd. to yield Et<sub>3</sub>NH.HCl, m. 222°; this (34.7 g.) and 43 g. 31.1% formalin were heated on a steam bath 12 hrs. to yield 47 g. 1-diethylamino-3-butanone (I), bp 78-81°. 1 (5 g.) was treated dropwise with 2-3 cc. 30% H<sub>2</sub>O<sub>2</sub> with spontaneous temp. rise to 70°, after which the mixt. was heated on a steam bath 12 hrs.; distn. of the mixt. gave 0.5 g. Me<sub>2</sub>CO, 1 g. EtOAc, 0.8 g. AcOH, and 1.26 g. residue which gave a pos. test for MeC(NO)OH. 1 (5 g.) with 9 g. KMnO<sub>4</sub> in 20 cc. H<sub>2</sub>O heated on a steam bath 24 hrs. yielded 0.5 g. Me<sub>2</sub>CO, 0.2 g. EtOH, Nil.

OVER

METALLURGICAL LITERATURE CLASSIFICATION



OWLEFANT, Ye. A.

"On the Oxidation of Aliphatic Amines V., The Relation of the Diethylaminoethanol to the Oxidizers," 16, No. 10, 1946, Mbr. Lab Water Emulsion and Napthelene, Ministry of Health USSR, -1941-.

10

A

Oxidation of aliphatic amines. VII. Behavior of 1  
diethylamino-4-aminopentane with oxidizing agents VIII  
Behavior of butylamine and dibutylamine with oxidizing  
agents V. S. Smirnov and E. A. Shklyaruk. *J. Gen.  
Chem. U.S.S.R.* 20, 351-3, 355-8 (1950) (Engl. transla-  
tion). See *C.A.* 44, 6380b R. M. S.

1ST AND 2ND ORDERS      3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

A  
1

S

COMMON ELEMENTS

COMMON VARIABLE ELEMENTS

MATERIAL INDEX

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

1ST AND 2ND ORDERS

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

3RD AND 4TH ORDERS

4TH AND 5TH ORDERS

4TH AND 5TH ORDERS

5TH AND 6TH ORDERS

5TH AND 6TH ORDERS

6TH AND 7TH ORDERS

6TH AND 7TH ORDERS

7TH AND 8TH ORDERS

7TH AND 8TH ORDERS

8TH AND 9TH ORDERS

8TH AND 9TH ORDERS

9TH AND 10TH ORDERS

9TH AND 10TH ORDERS

Oxidation of aliphatic amines. VIII. Behaviour of n-butylamine and dibutylamine with oxidants: N. B. Sokolov and E. A. Shklyaruk (J. gen. Chem. USSR, 1959, 28, 234-237 (U.S. transl., 355-358); cf. preceding abstract). — Pr: CO<sub>2</sub>H; NH<sub>2</sub>OH; and NH<sub>3</sub> are identified as the oxidation products of Bu<sup>n</sup>NH<sub>2</sub> and dibutylamine by H<sub>2</sub>O<sub>2</sub>, CrO<sub>3</sub>, and K<sub>2</sub>MnO<sub>4</sub>. H. WANN.

LEVCHENKO, D.N.; KHUDYAKOVA, A.D.; KALITAYEVA, A.L.; SHKLYARUK, Ye.A.;  
KHOKHLOV, V.I.; CHUGREYEVA, A.S.

Nonionogenic surface-active agents as demulsifiers for petro-  
leum emulsions. Khim.i tekhn.topl.i masei. 5 no.4:24-29 '  
Ap '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke  
nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.  
(Surface active agents) (Emulsions)

SHCHAYEV, A. S.

Defended his Candidate's dissertation in the Geography Faculty of Moscow State University on 2 July 1952.

Dissertation: "The Influence of Agricultural Activities of Man on the Flow of the Oka River to the City of Kaluga."

SC: Vestnik Moskovskogo Universiteta, Seriya Fiziko-Matematicheskikh i Yestestvennykh Nauk, No. 1, Moscow, Feb 1953, pp 151-157; transl. in M-29732, 12 April 54, [REDACTED]

Translation from: Referativnyy zhurnal, Geografiya, 1957, <sup>14</sup> p 104 (USSR)

AUTHOR: Shklyayev, A. S.

TITLE: Effect of Agriculture on the Oka River Basin Above the City of Kaluga (K voprosu o vliyanii khozyaystvennoy deyatel'nosti cheloveka na stok basseyna r. Oki do g. Kalugi)

PERIODICAL: Uch. zap. Molotovsk. un-ta, 1955, Vol 9, Nr 1, pp 163-179

ABSTRACT: The author presents a physical and geographical description of the basin. He compares annual flow to spring flow, in the years when agricultural activity was insignificant, with the flow during the years 1933 to 1941. While hydrological conditions during the latter period resembled those of the earlier, an intensification in agricultural activity occurred

Card 1/3

14-57-7-14855

Effect of Agriculture on the Oka River Basin (Cont.)

in the years separating the two periods. The author made four types of investigations: 1) analysis of the relationship between spring flow and climatic factors; 2) comparison of annual and spring flows of 1931-1932 and 1940-1941 with the flows during earlier periods (1885-1886 and 1930-1931); 3) analysis of the period of the five-year plans; 4) analysis of annual and spring flows in single years. In the first variant he investigates the relation between the equation  $y_{sp} = f(s + x)$ , (where  $y_{sp}$  is the spring flow,  $s$  is the amount of water in the snow cover at the beginning of the thaw, and  $x$  is the amount of spring precipitation for the period from the start of the thaw to the end of the floods minus the time necessary for the talic waters to arrive from their furthest positions (all values in millimeters). In general, all four methods of study gave approximately the same results as to the decrease in both spring and annual flow during the third decade. Annual flow decreased by 10.4 mm to 21.3 mm (six to 12.4 percent the total annual flow) and spring flow decreased 12.8 mm to 14 mm (10.5 to 14 percent of the total

Card 2/3

Effect of Agriculture on the Oka River Basin(Cont.)

14-57-7-14855

annual flow). The author stresses the fact that for a more accurate determination of x a more objective means for determining the end of spring floods must be found and used in the studies of this type, that it would be desirable to consider physical and geographical differences in various parts of the basins in greater detail, and so on. He points out that similar studies in other districts have also indicated that agriculture causes changes in the flow. As a result, former flow norms have become outmoded. A bibliography of 13 titles is included.

Card 3/3

G. Zh.



MATARZIN, YU.M.; SHELYAYEV, A.S.

"Limnology" by B.E.Bogoslovskii. Reviewed by I.U.M.Matarzin, A.S.  
Shkoliaev. Vest. Mosk.un. Ser. 5: Geog. 16 no.5:77-78 S-0 '61.  
(MIRA 14:9)

(Limnology) (Bogoslovskii, B. E.)

SHKLYAYEV, A.S.

Perennial fluctuations in the water volume of the Kama River near  
the city of Perm. Uch. zap. Perm. gos. un. 15 no.2:93-102 '60.

(MIRA 14:12)

(Kama River--Runoff)

BALKOV, V.A.; SHKLYAYEV, A.S.

Changes in the **breakup dates** of the Kama River near the city  
of Perm in connection with the warming of the climate. Uch.  
zap. Perm. gos. un. 15 no.2:103-107 '60. (MIRA 14:12)  
(Kama River--Ice on rivers, lakes, etc.)

SHKLYAYEV, A.S., kand.geograf.nauk (Perm'); ZUBKOV, Ye.F., kand.geograf.-  
nauk (Perm')

Early spring. Priroda 51 no.4:127-128 Ap '62. (MIRA 15:4)  
(Russia, Northern--Spring)

ZUBKOV, Ye.F. (Perm'); SHKLYAYEV, A.S. (Perm')

In the Kama region. Priroda 51 [i.e. 52] no.5:128 '63.  
(MIRA 16:6)

(Kama region--Spring)

SHKLYAYEV, Aleksandr Sergeyeovich; BALKOV, Vladimir Aleksandrovich;  
VERSHININ, T.I., red.; YEZOV, G.M., tekhn. red.

[Climate of Perm Province] Klimat Permskoi oblasti. Perm',  
Permskoe knizhnoe izd-vo, 1963. 189 p. (MIRA 17:2)

LITVINOV, L.N., kand.tekhn.nauk; MORIGEROVSKIY, V.M., kand.tekhn.nauk;  
LEVSHIN, S.V., inzh.; SHKLYAYEV, A.V., inzh.

Driving piles with diesel hammers not of the drop hammer type.  
Transp. stroi. ll no.7:13-14 JI '61. (MIRA 14:7)  
(Piling (Civil engineering))

PROCESSES AND PROPERTIES INDEX

1843. INJECTION BURNER. Shklyayev, F. I. (Za Ekonomiyu Topliva (Fuel Economy), 1947, N<sup>o</sup>. 8, 21-4).

Continuation of a previous articles (NO. 4, 1947), giving details of practical experience with injection burners.

COMMON ELEMENTS

OPEN MATERIALS INDEX

ASIA METALLURGICAL LITERATURE CLASSIFICATION

ALPHABETIC INDEX

U	V	W	X	Y	Z	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
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



SHKIYAYEV, F. I.

PA 4T43

USSR/Fuel Consumption  
Gas, producer

Apr 1947

"Analytical Study on Combustion of Producer Gas in  
Flameless Burners," F. I. Shkiyayev, 6 pp

"Za Ekonomiyu Topliva" Vol IV, No 4

Graphs of operating data, cross section of burner,  
theoretical discussion, and bibliography

4T43

REZVYKH, A.I.; SHKLYAYEV, I.P.; KABAYEV, K.

Treating goats in malignant forms of smallpox. Veterinariia 34  
no.6:33-34 Jan 1971. (MLRA 10:7)

1. Starehnyy nauchnyy sotrudnik Kirgizskogo nauchno-issledovatel'skogo instituta zhivotnovodstva i veterinarii (for Rezvykh). 2. Zaveduyushchiy Karavanskoy mezhrayonnoy vetbaklaboratoriyey Dzhahalal-Abadskoy oblasti (for Shklyayev). 3. Glavnyy veterinarnyy vrach Ala-Bukinskogo rayona Dzhahalal-Abadskoy oblasti (for Kabayev).  
(Smallpox in animals) (Goats--Diseases and pests) (Neorsphenamine)

~~SHKLYAYEV, P. N.~~

Using given pressure distribution over wing surfaces in potential incompressible fluid flow for designing wing profiles. Trudy K&I 23:67-72 '49. (MIRA 10:6)

(Airfoils)

SHKLYAYEV, P.N.

Chord graph for pressure distribution over wing surfaces used  
for designing wing profiles. Trudy KAI 23:73-88 '49. (MLRA 10:6)  
(Airfoils)

SHKLYAYEV, P.N.

Using the method of special points for designing wing profiles  
considering given pressure distribution. Trudy KAI 24:87-100  
'50. (MIRA 10:7)

(Airfoils)

SHKLYAYEV, P.N.

Distribution of flow speed in an inlet channel and design of  
inlet channels with low resistance. Trudy KAI 25:63-71 '51.

(MLRA 10:7)

(Aerodynamics)

117 AND 120 GROUPS  
PROCESSES AND PROPERTIES INDEX  
121 AND 124 GROUPS

ca

10

**Steric hindrance in Grignard reactions. I. Reaction of 2-mesitylmagnesium bromide with ethyl formate and ethyl acetate.** I. I. Lapkin, V. S. Shklyayev and T. I. Shklyayeva. *J. Gen. Chem. (U. S. S. R.)* 10, 1449-52 (1940).—The normal reaction products of 2-mesitylmagnesium bromide (I) and  $HCO_2Et$  were not obtained. Di-2-mesitylmethane and mesitol (II) were isolated instead. Due to steric hindrance the reaction of I and  $AcOEt$  does not work at all under ordinary conditions and proceeds only slightly on continuous heating for 20 hrs., at temps. up to  $100^\circ$ . II and 2-mesityl acetate were isolated. On the basis of elementary analysis the formation of the acetate of methyl-di-2-mesitylcarbinol is assumed.  
James J. Lichtin

COMMON VARIANTS INDEX

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.

ASD-SLA 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.

SHKLYAYEV, V. S.

CATALYST

Chemical Abst.  
Vol. 48 No. 8  
Apr. 25, 1954  
Organic Chemistry

*(over)*  
/ *N*-Aryl amides of hydroxy carboxylic acids and their transformation into heterocyclic compounds. XX. Regularities of intramolecular ring closure in *N*-aryl amides of hydroxy carboxylic acids. P. A. Petyunin and V. S. Shklyayev (Pharm. Inst., Molotov). *Zhur. Obshchei Khim.* 23, 833-80 (1953); cf. Yakubovich and Ginsburg, *C.A.* 47, 9254g; preceding abstr.—The rate of ring closure in  $\alpha,\omega$ -1 amides of HO carboxylic acids declines regularly as the ring size increases from 5 to 8 members. Generally the presence of electron-accepting groups in the Ph radicals at the  $\omega$ -end C permits ring closure of larger rings than is possible in the presence of electron-donor substituents. Org. compds. that cyclize by an ionic mechanism do not require diln. for isolation of the mols., as the presence of the charge represses intermol. reactions. SnCl<sub>4</sub> is a good reagent for ring closure in this series. PhCH<sub>2</sub>CH<sub>2</sub>CHMeNH<sub>2</sub> (16 g.) in 20 ml. EtOH heated with 20 g. (CO<sub>2</sub>Et)<sub>2</sub> and uret neutral gave 2.6% sparingly sol. *N,N'*-bis(1-methyl-3-phenylpropyl)oxamide, m. 170-2° (from EtOH). The filtrate yielded 51% Et ( $\alpha$ -methylphenethyl)oxamate (I), b. 183.5-5°,  $d_4^{20}$  1.0821,  $n_D^{20}$  1.5135, which with NH<sub>3</sub> in EtOH gave 81% corresponding oxamide, m. 180° (from EtOH). I with 0.5 mole PhMgBr gave 55.5% *N*-( $\alpha$ -methylphenethyl)benzamide, m. 83° (from 70% EtOH). This (1 g.) in 6.5 ml. AcOH and 17 ml. concd. H<sub>2</sub>SO<sub>4</sub> gave a brown soln. which turned green, then orange-yellow; diln. with 50 ml. H<sub>2</sub>O gave 52% *o*-(3-gminobutyl)triphenylacetic acid lactam, m. 153°

*(over)*



(from AcOH). Treatment of PhCHMeNHCOCO<sub>2</sub>H<sub>2</sub> with 4 moles p-MeC<sub>6</sub>H<sub>4</sub>MgI gave 13.7% N-(α-methylbenzyl)-p-tolilamide, PhCHMeNHCOC(OH)(C<sub>6</sub>H<sub>4</sub>Me-p), m. 112° (from C<sub>6</sub>H<sub>6</sub>). p-MeOC<sub>6</sub>H<sub>4</sub>MgI in the above case gave 22% 4,4'-dimethoxy-N-(α-methylbenzyl)benzilamide, m. 96° (from EtOH). PhCH<sub>2</sub>CH<sub>2</sub>NHCOCO<sub>2</sub>Et and 5 moles p-MeOC<sub>6</sub>H<sub>4</sub>MgI gave 43% β 4,4'-dimethoxy-N-phenethylbenzilamide, m. 107-3° (from EtOH). Neither of these 2 amides cyclized in AcOH-H<sub>2</sub>SO<sub>4</sub> even after 120 hrs., the original red color being maintained in the soln. Brief heating of 5.5 g. p-BzC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>Me and PhNHMgBr (from 1.5 g. Mg, 5.1 g. PhNH<sub>2</sub>, 5.5 g. EtBr) gave p-BzC<sub>6</sub>H<sub>4</sub>CONHPh, m. 103-4° (from MePh), which with 0.5 mole PhMgI gave 80% Ph<sub>2</sub>C(OH)C<sub>6</sub>H<sub>4</sub>CONHPh-p, m. 182°, gives a yellow color with 70% H<sub>2</sub>SO<sub>4</sub> and no color with HCl, and did not cyclize in AcOH-H<sub>2</sub>SO<sub>4</sub> even after 0.5 hr. on a steam bath. (p-MeOC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>C(OH)CONHC<sub>6</sub>H<sub>4</sub>OEt-p (2 g.) and 0.8 g. PhOH in 20 ml. C<sub>6</sub>H<sub>6</sub> were briefly warmed with 2 g. SnCl<sub>4</sub> until the red-violet color vanished; on cooling and diln., the org. layer yielded 78% 3,3-bis(p-methoxyphenyl)-5-ethoxyoxindole, m. 179-80° (cf. C.A. 46, 11161e). Similar treatment of 1-C<sub>6</sub>H<sub>4</sub>NHCOC(OH)Ph<sub>2</sub> (1.5 g.) with 0.5 g. resorcinol and 2 g. SnCl<sub>4</sub> in C<sub>6</sub>H<sub>6</sub> gave 98% 3,3-diphenyl-6,7-benzoxindole, m. 254° (cf. C.A. 46, 8070k). Benzilamide (3 g.), 1.1 g. PhOH, and 3 g. SnCl<sub>4</sub> similarly gave 75.5% 3,3-diphenyloxindole, m. 225°. The relative rates of ring closures at 20° are as follows: For Ph<sub>2</sub>C(OH)CONHR (R given): Ph 400, PhCHMe 328, PhCH<sub>2</sub>CH<sub>2</sub> 240, PhCH<sub>2</sub>CH<sub>2</sub>CHMe 60. For (p-MeC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>C(OH)CONHR: Ph 12 (with 0.3 the amt. of H<sub>2</sub>SO<sub>4</sub> in comparison with above examples), Ph 43 (at 30°), PhCHMe 13.6 (at 30°). o-MeOC<sub>6</sub>H<sub>4</sub>NHCOC(OH)(C<sub>6</sub>H<sub>4</sub>OMe-p)<sub>2</sub> at 20° with 0.02 the amt. of H<sub>2</sub>SO<sub>4</sub> 1; its PhCHMe and PhCH<sub>2</sub>CH<sub>2</sub> analogs did not cyclize.

G. M. Kosolapoff

9-2-54  
G.M.

4 *o*-positions in Ar' radicals are occupied do not undergo ring closure owing to steric hindrance. The rates of closure of rings in the *N*-(1-bromo-2-naphthyl)- $\alpha,\alpha$ -di-*p*-tolylglycolamide and *N*-(2-naphthyl)- $\alpha$ -(*p*-tolyl)glycolamide are the same; the fact is explained by weakening of the nucleophilic center caused by electron-acceptor function of the Br atom. The rate of closure of 2-C<sub>6</sub>H<sub>4</sub>NHCO(OH)(C<sub>6</sub>H<sub>4</sub>OMe-*p*) is 0.25 of that of the 1-C<sub>6</sub>H<sub>4</sub> analog at 20°. In a present series in which the rate of closure of *o*-MeOC<sub>6</sub>H<sub>4</sub>NHCO(OH)(C<sub>6</sub>H<sub>4</sub>OMe-*p*) is taken as 1, the following rates are found (Ar = Ph; Ar', rate given): *m*-ClC<sub>6</sub>H<sub>4</sub>, very high; *p*-Cl analog, 12.5; *p*-Br analog, 5; *p*-Me analog, 12; *o*-Me analog, 1800. To *m*-ClC<sub>6</sub>H<sub>4</sub>MgI (from 42.5 g. *m*-ClC<sub>6</sub>H<sub>4</sub>I and 4.4 g. Mg) was added 7.7 g. PhNHCO(OH)Et; the usual treatment gave 49% I (Ar = Ph, Ar' = *m*-ClC<sub>6</sub>H<sub>4</sub>) (II), m. 170-1°; *p*-Cl analog prepd. similarly in 55% yield, m. 181.5-2.5°; the *p*-Br analog, 32.5%, m. 192-4°. Use of Et 1-naphthylloxamate, similarly, gave 46.8% I (Ar = 1-C<sub>6</sub>H<sub>4</sub>, Ar' = *m*-MeOC<sub>6</sub>H<sub>4</sub>), m. 151-2.5°. Et 2-methoxyoxanilate and mesitylmagnesium bromide gave 22% I (Ar = *o*-MeOC<sub>6</sub>H<sub>4</sub>, Ar' = 2,4,6-Me<sub>3</sub>C<sub>6</sub>H<sub>2</sub>), m. 162-4°, which failed to close the ring even after 3 hrs. heating with H<sub>2</sub>SO<sub>4</sub>. Passage of NH<sub>3</sub> into Et *N*-(1-bromo-2-naphthyl)oxamate in EtOH gave 96% corresponding amide, m. 231-2° (from C<sub>6</sub>H<sub>6</sub>); the ester heated with 0.5% NaOH gave the free acid, m. 158-9° (decompr.; from C<sub>6</sub>H<sub>6</sub>). Reaction of the Et ester with *p*-MeC<sub>6</sub>H<sub>4</sub>MgI gave 38% I (Ar = 1,2-BrC<sub>6</sub>H<sub>4</sub>, Ar' = *p*-MeC<sub>6</sub>H<sub>4</sub>), m. 158-60°. II in 15 ml. concd. H<sub>2</sub>SO<sub>4</sub> gave a red-violet color which disappeared rapidly; diln. with H<sub>2</sub>O gave 70% 3,3-bis(-3-chlorophenyl)oxindole, m. 248-50° (from AcOH). Similarly the 4,4'-dichloro analog gave 3,3-bis(4-chlorophenyl)oxindole, 52.3%, m. 186-7° (from dil. EtOH), while the 4,4'-dibromo analog gave 31% 3,3-bis(4-bromophenyl)oxindole, m. 198-200°, when the reaction with H<sub>2</sub>SO<sub>4</sub> was run in AcOH soln. The same method was used to obtain 3,3-bis(4-tolyl)-7-bromo-5,6-benzoxindole, 31%, m. 203-5° (from AcOH), and 3,3-bis(3-methoxyphenyl)-6,7-benzoxindole, 62.7%, m. 200.5-3.0° (from AcOH).

G. M. Kosolapoff

6(3)  
chem

11F  
7-25-54

C.A. V-48  
Jan 10, 1954  
Organic Chemistry

The effect of the nature and the position of substituents in phenyl radicals of ArNHCO(OH)Ar' on the closure of five-membered heterocycle. XIX. P. A. Petyn, and V. S. Shklyav (Pavlov Inst., Molotov). Zhur. Obshchei Khim. 23, 1364-70 (1953); cf. C.A. 47, 7489g. The nature and the position of substituents in Ar' group of ArNHCO(OH)Ar' detms. the rate of ring closure. Electron-acceptor groups increase the electrophilic nature of the carbonium C atom and increase the rate of closure; at the same time the rate declines in the order: *m*, *o*, *p* with variation of the site of the substituents. Carbinols in which all

SHKLYAYEV, V. S.

USSR/Chemistry - Reaction processes

Card 1/1 Pub. 151 - 33/36

Authors : Petyunin, P. A.; Berdinskiy, I. S.; and Shklyayev, V. S.

Title : Reaction of N,N'-bis-(magnesium halide)-aryl amines with esters and acid halides

Periodical : Zhur. ob. khim. 24/1, 178-180, Jan 1954

Abstract : A study of the reaction between N,N'-bis-(magnesium halide)-aryl amines and esters and acid halides showed that the aryl amines react like dimagnesium-organic compounds. It was established that the reaction between esters and N,N'-bis-(magnesium halide)-aryl amines has certain advantages and was therefore recommended for the synthesis of aryl amides of mono- and dibasic acids, halogen-, hydroxy- and alpha, beta-unsaturated acids. The possibility of applying this reaction for the synthesis of dibenzoyl derivatives of aromatic amines is discussed. Six references: 4-German; 1-French and 1-USSR (1904-1952). Table.

Institution : The Molotov Pharmaceutical Institute, Laboratory of Organic Chemistry

Submitted : July 2, 1953

SHKLYAYEV, V. S.

USSR/Chemistry

Card 1/1

Authors : Petyunin, P. A., Shklyayev, V. S., and Berdinskiy, I. S.

Title : Effect of Nature and Position of the Substituents in the Benzene Nucleus, in the Case of Nitrogen on the Closing of the Five-Membered Heterocycle in Arylamides of Oxycarboxylic Acids. Part 21. -

Periodical : Zhur. Ob. Khim., 24, Ed. 6, 1078 - 1082, June 1954

Abstract : The effect of nature and position of substituents in the benzene nucleus in the case of nitrogen on the closing of a five-membered heterocycle in arylamides 4, 4'-dimethoxybenzilic acid, was investigated. It was established that the rate of cycle closing, under the effect of various substituents, decreases in the following order:  $\text{CH}_3\text{O} > \text{CH}_3 > \text{J} > \text{Br} > \text{Cl} > (\text{CH}_3)_2 \text{NH}$ . The introduction of electron donor substituents increases the rate of cycle closing. New, hitherto unknown, arylamides of 4, 4'-dimethoxybenzilic acid and derivatives of 3, 3-bis-(4-methoxyphenyl)-oxindol, were obtained and their properties investigated. Six references. Table.

Institution : The Pharmaceutical Institute, Molotov.

Submitted : January 3, 1954

PETYUNIN, P.A.; SHKLYAYEV, V.S.

Research data on the chemistry of heterocyclic compounds. Part 28:  
Synthesis and properties of 1-phenyl-3,3-diaryloxindoles. Zhur. ob.  
khim. 27 no.3:731-734 Mr '57. (MLRA 10:6)

1. Molotovskiy farmatsevticheskiy institut.  
(Oxindole) (Glycolic acid)

SHK Lyayou, (S. 67)

1. 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, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

1/2

HEB/HE3d/HE2d(V)

SHKL

of the ...

PeTyunin, P. A., Shklyarev, U. S. and ...  
 Similarly were prepd.: 66.3% 3-Atara-5-bromo-2-amino-  
 triphenylcarbinol, m. 110-18° (N-Ac deriv., m. 192-3°);  
 3,5-dichloro-2-aminotriphenylcarbinol, 61.8%, m. 112.5-  
 13.6° (N-Ac deriv., m. 178-80°); 64.56% 3,5-dibromo-2-  
 aminotriphenylcarbinol, m. 112-13° (N-Ac deriv., m. 206-  
 7°). Heating 3-bromo-5-chloro-2-aminotriphenylcarbinol  
 in PhNO<sub>2</sub> 0.5 hr. gave 79% 2-chloro-4-bromo-9-phenylacri-  
 dine, m. 228-9°, also prepd. in 61.5% yield by refluxing the  
 carbonyl acetyl deriv. in PhNO<sub>2</sub> 4 hrs. Similarly were  
 prepd.: 55-60% 2-bromo-4-chloro-9-phenylacridine, m. 214-  
 15°; 53.6-61.1% 2,4-dichloro-9-phenylacridine, m. 213-  
 13.6°; 2,4-dibromo-9-phenylacridine, 63-6.8%, m. 232-3°.

G. M. Kosolapoff

8  
 2 may  
 3  
 2/2

PM

5.3610

27519  
S/080/60/033/006/039/041/XX  
D228/D302

AUTHORS: Petyunin, P.A., Shklyayev, V.S., and Konshin, M.Ye.

TITLE: Synthesis of the N-alkylanilines

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 6, 1960,  
1428 - 1430

TEXT: According to N.N. Vorozhtsov (Ref. 1: Osnovy sinteza promezhutochnykh produktov i krasiteley (Bases of the Synthesis of Intermediate Products and Dyes), Goskhimizdat, 438, 324, 360, 1955), N-alkylarylamines are best prepared from the alkylation of aromatic amines with alcohols and halogenoalkyls or from the alkylation of certain benzene derivatives. Therefore, since anthranilic acid is readily decarboxylized to form aniline, the authors decided to utilize it as the basis of a method for synthesizing N-alkylanilines. In this respect they note that A.F. Bekhli (Ref. 4: Zh. org. khimii, 27, 701, 1957) also used the decarboxylation of anthranilic acid derivatives to obtain the  $\beta$ -proprionitriles. The experimental procedure comprises the following stages: Neutraliza-

Card 1/3

X



27519

S/080/60/033/006/039/041/XX  
D228/D302

Synthesis of the N-alkylanilines

tion of a solution of 0.1 mole anthranilic acid in 40-50 ml. H<sub>2</sub>O with cond. KOH; addition of 0.1 mole halogenoalkyl to the filtrate; boiling of the solution for 10 - 12 hr; methylation with methyl iodide or the methyl ether of toluenesulfonic acid; and crystallization of the N-alkylanthranilic acids from suitable solvents. On heating above their melting points (81 - 153°) these acids are converted into the corresponding mono-alkylanilines through the loss of CO<sub>2</sub>. Advantageous features of the method include the ease of the decarboxylation reaction, the high yield (87 - 98 %) and the formation of individual amines which obviates the necessity of having to separate them by laborious techniques. In view of the labile nature of these compounds it is advisable to prepare them as required from the more stable alkylanthranilic acids. The authors conclude by noting that the alternative use of the derivatives of n-aminobenzoic acid is less satisfactory, as in this case the yields are lower and intermediate products have higher melting points. There are 2 tables and 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: H. Gilman et al, J. Amer. Chem. Soc. 62,

Card 2/3

SK

Synthesis of the N-alkylanilines  
27519  
S/080/60/035/006/039/041/XX  
D228/D302  
977, 1940; W.S. Fones, Chem. A. 44, 3921, 1950.  
ASSOCIATION: Permskiy farmatsevticheskiy institut (Perm Pharma-  
ceutical Institute)  
SUBMITTED: September 14, 1959

X

Card 3/3

SHKLYAYEVA, N.V.

Theorems on the integral inequality for Volterra type  
n-dimensional integral equations. Volzh. mat. sbor.  
no.1:239-240 1963. (MIRA 19:1)

18. 3200

S/113/60/000/009/005/005  
A002/A001

AUTHORS: Yakimanskiy, V. V., Candidate of Technical Sciences, Silyapin, N. A., Kirichinskiy, I. I., Shklyarov, I. N., Kalashnikov, S. N., Candidate of Technical Sciences

TITLE: A New Technology of Manufacturing Helical Bevel Gears Using the Method of Hot Knurling of Teeth

PERIODICAL: Avtomobil'naya promyshlennost', 1960, No. 9, pp. 39-43

TEXT: The technology and the equipment used for the manufacture of helical bevel gears by hot knurling is described. This new production process and problems connected with it were investigated by the Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy promyshlennosti (Scientific Research Institute of Automobile Industry Technology) in cooperation with the Moscow Automobile Plant imeni Likhachev. Used for the manufacture of helical bevel gears of 3M/1-157 (ZIL-157) and GAZ-51 (GAZ-51) vehicles, the new technology will result in a saving of 4 kg of alloy steel per gear. The equipment formerly used for preliminary cutting of the gear teeth is no longer necessary. The capital spendings required for the special equipment are paid off within 1 to 1.5 years.

Card 1/3

S/113/60/000/009/005/005  
A002/A001

A New Technology of Manufacturing Helical Bevel Gears Using the Method of Hot Knurling of Teeth

The new method of generating gear teeth consists in the successive local deformation of the surface layer of the gear blank, heated to a plastic state by high-frequency induction current. The deformation is effected by a gear knurling tool having the shape of a bevel gear. The coordinated rotation of the blank and the tool during the teeth knurling process ensures a rigid and short kinematic chain, which is one of the most important features of a gear knurling machine. The research into hot knurling of helical bevel gears was performed on an experimental gear knurling machine (shown in Fig. 2). Formulas are given for calculating the force required for gear teeth knurling. The induction heating system is described. A NBC-100/2500 (FVS-100/2500) 110-kw high-frequency generator is used for this purpose; its operating frequency is 2,500 cps. The principal circuit diagram is given (Fig. 6). Provisions were made in the experimental teeth knurling machine for performing the knurling operation under shielding gas. Graphite lubrication of the teeth of the knurling tool has a favorable effect on the tooth shaping process. Furthermore, the shape and the dimensions of the gear blank are of great importance. The gear blank is produced by stamping, for example from 12X2H4A (12Kh2N4A) steel. It is machined on a

Card 2/3

S/113/60/000/099/005/001  
A002/A001

A New Technology of Manufacturing Helical Bevel Gears Using the Method of Hot Knurling of Teeth

lathe prior to hot knurling of the gear teeth. Heat treatment after the knurling operation is necessary, since the gear teeth have been hardened during the cooling-off period immediately after knurling. After tempering, the gears are machined on a lathe and on a grinding machine and are finished on a gear broaching machine. The final operations are the same as those used in the manufacture of helical bevel gears by conventional methods. After the final heat treatment, the depth of the hardened layer amounts to 1.2-1.5 mm and its hardness HRC  $\geq 58$ , while the hardness of the teeth cores is HRC 35-40. The structure of the hardened layer contains martensite and residue austenite, thus existing requirements are met. The precision of helical bevel gears manufactured according to this method is not below that of gears manufactured according to conventional methods, while their strength characteristics are even higher according to tests performed at the Moscow Automobile Plant imeni Likhachev. The entire teeth knurling process (not counting the time required for mounting the blank) lasts about 1.5 minutes. In conclusion it is said that the method of knurling of gear teeth should be used at automobile, tractor and other machinebuilding plants because of its advantages. There are 8 figures.

ASSOCIATION: NIIIAvtoprom, Moskovskiy zavod imeni Likhacheva (Moscow)  
Card 3/3 \_\_\_\_\_

SHKLYAYEV, V.V. [deceased], dots. (Omsk, ul. Maslennikova, d.143, kv.20)

Intramedullary metallic osteosynthesis in fractures and pseudarthroses  
of the long bones [with summary in English]. Vest.khir. 80 no.6:31-36  
Je '58 (MIRA 11:7)

1. Iz kafedry gosital'noy khirurgii (ispolnyayushchiy obyazannosti  
zaveduyushchego - dots. V.V. Shklyayev [deceased]) Omskogo meditsinskogo  
instituta M.I. Kalinina.

(ARM, fract.

intramedullary metallic osteosynthesis in fract.  
& pseudarthrosis (Rus))

(LEG, fract.

same (Rus))

SEMENOV, S.S.; SHPIL'FOGEL', P.V.; ARSHANSKIY, A.M.; SHKLYAYEVA, A.P.

Concentrated shale as an organomineral filler in molded powders  
of phenolic plastics obtained by the emulsion method. Trudy VNIIT  
no.10:180-188 '61. (MIRA 15:3)  
(Phenol condensation products)(Shale)



SHKLYAYEVA, N. I.

"The Agrobiological Characteristics and the Principle Procedures for the Cultivation of Siberian Wild Rye Under the Conditions Which Exist in the Yamalo-Nenetsk National Okrug." Cand Agr Sci, Sci Res Inst of Polar Farming, Animal Husbandry and Hunting and Fishing Economy, Leningrad, 1953. (RZhBiol, No 2, Sep 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

So: Sum. No. 481, 5 May 55

**Steric hindrance in Grignard reactions. IV. New preparation method for esters of secondary  $\alpha$ -hydroxy acids.**

I. I. Lapkin, M. G. Shklyarva, G. A. Koryakina, and O. N. Vinokurova (Molotov State Univ.). *J. Gen. Chem.* (U.S.S.R.) 17, 1332-8 (1947) (in Russian); cf. *C. A.* 41, 1218a.—The applicability of the previously described method for the prepn. of esters of  $\alpha$ -HO acids through a Grignard reaction of esters of  $(CO_2H)_2$  was studied further with sterically hindered derivs. The reaction is applicable to compds. having 1 or 2 Me groups in the ortho position of  $RMgX$ . The 2nd ring of the  $C_6H_5$  radical may be considered as a single  $\alpha$ -Me substituent. The Grignard reagent from 40 g.  $BrMe_2C_6$ , 22 g.  $EtBr$ , and 13 g.  $Mg$  in  $Et_2O$  was treated rapidly with cooling and stirring with 35 g.  $(CO_2Et)_2$  in  $Et_2O$ ; after refluxing 12 hrs. the mixt. was treated with  $H_2O$  and 10%  $AcOH$ . The aq. layer gave 4 g.  $MgC_2O_4 \cdot 2H_2O$ . The org. layer on distn. gave 30% *Et* (pentamethylphenyl)glycolate,  $b_p$  166–70°,  $m$  81° (from petr. ether). Similar reaction of 43 g. bromodurene, 22 g.  $EtBr$ , 13 g.  $Mg$ , and 35 g.  $(CO_2Et)_2$  gave 35% *Et* (2,3,5,6-tetramethylphenyl)glycolate,  $b_p$  155–65°,  $m$  94° (from petr. ether), which on hydrolysis with 5% alc.  $KOH$  gave the free acid,  $m$  160–1° (from dil.  $EtOH$ ). Similar reaction using 29 g. bromoisodurene, 3.5 g.  $Mg$ , and 21 g.  $(CO_2Et)_2$  gave *Et* (2,3,4,6-tetramethylphenyl)glycolate (35%),  $b_p$  150–60°,  $m$  58° (from petr. ether). Analogously, 52 g. 1- $BrC_6H_4$ , 6.5 g.  $Mg$ , and 36 g.  $(CO_2Et)_2$  gave 40% *Et* 1-naphthylglycolate,  $b_p$  188–202°,  $m$  68–9° (from  $Me_2CO$ ); this is a previously unknown racemic form. Hydrolysis by 5% alc.  $KOH$  gave the free acid,  $m$  93° (from  $H_2O$ ). In addn. to the ester there was also isolated a fraction,  $b_p$  240–300°, which was sepd. by treatment with hot  $Me_2CO$  into  $Me_2CO$ -insol. *bi-1-naphthoyl*,  $m$  193–4° (from  $PhMe$ ), and  $Me_2CO$ -sol. 1-naphthoin,  $m$  138–9° (from  $Me_2CO$ ). V. Mechanism of Grignard reaction, and the reducing action of Grignard compounds. I. I. Lapkin. *Ibid.* 1339–60.—The literature on the reducing action of Grignard reagents is given with numerous references. The general reaction mechanism of the reducing action of Grignard reagents

and the over-all reaction of esters with Grignard reagents is influenced by 2 factors: structure of the alkoxy group of the esters and the dissoc. const. of the acid component of the esters. The primary product,  $EtO_2CCR_1(OMgX)OEt$ , either reacts with another mol. of the Grignard reagent, if the radical  $R$  lacks sterically hindering groups, to give compds. of types  $EtO_2CCR_1(OMgX)_2$  or  $[CR(OMgX)OEt]_2$ , or, in the case of sterically hindering groups or a deficiency of the Grignard reagent, the reaction stops at the 1st stage and, on heating, the primary product breaks down across the weakest bond. An example is the formation of  $EtO_2CCHR(OMgX)$  and  $AcH$ . The decompn. of the esters of this type depends on the electroneg. nature of the radicals  $R$ . Since  $(CO_2H)_2$  is a strong acid, its esters tend to give esters of secondary  $\alpha$ -HO acids, while esters of weaker acids give a stable initial product which on hydrolysis gives the normal reaction products,  $RCOR'$ . To 37 g.  $EtOBz$  was added slowly the Grignard reagent from 50 g. bromomesitylene and 6.5 g.  $Mg$  in  $Et_2O$  and the mixt. was heated 20 hrs., then hydrolyzed with 10%  $AcOH$  to give 17.4 g. 2,4,6-trimethylbenzophenone,  $b_p$  180–2°. If the order of addn. was reversed the reaction gave, in addn., a small amt. of an unidentified product,  $b_p$  270–80°. To 69.5 g. di- $Bu$  phthalate in  $Et_2O$   $PhMgBr$  (from 39 g.  $PhBr$  and 7 g.  $Mg$ ) in  $Et_2O$  was added with cooling and stirring; after heating 20 hrs. and decompn. with 10%  $AcOH$  there were obtained: 2 g.  $Ph_2$  crude  $Bu$  2-benzoylbenzoate,  $b_p$  195–215° (which after hydrolysis by 5% alc.  $KOH$  gave 7 g.  $\alpha$ - $BzC_6H_4CO_2H$ ), and diphenylphthalide,  $b_p$  195–230°,  $m$  116° (from  $EtOH$ ). To 31 g.  $ClCH_2CO_2Et$  in  $Et_2O$  was added with cooling and stirring the Grignard reagent from 52 g. 1- $BrC_6H_4$  and 6.5 g.  $Mg$  in  $Et_2O$ ; heating 20 hrs. and decompn. with dil.  $AcOH$  gave 33.8 g. unreacted  $ClCH_2CO_2Et$ , and 4 g. crude (1 g. pure)  $ClCH_2$

$\text{CO}_2\text{H}_2$ , m. 39-40° (from petr. ether). Similar reaction of 0.25 mol. mesitylmagnesium bromide (I) and 0.25 mol.  $\text{CH}_3(\text{CO}_2\text{Et})_2$  gave but 0.4 g. reaction product, b. 165-95°; neither increased duration of reaction nor the use of 2 mols. of the Grignard reagent caused an improved yield; the other products isolated were mesitylene and  $\text{CH}_3(\text{CO}_2\text{Et})_2$  in amts. near to those used initially. Similar results were obtained in the reaction of I with di-Et succinate, where only minute amts. of reaction product were obtained even when PhMe was used as solvent (reaction temp. 130°), the other products being mesitylene and di-Et succinate. The previously described reaction of I with esters (i. oxalic acid (C.A. 41, 1218)) was repeated; after the decompn. with 10% AcOH both the aq. layer and the solvent distillate were treated with alc. dimedon; this technique permitted the isolation of PrCHO from the reaction of I with  $(\text{CO}_2\text{Bu})_2$ , and Me-CHCHO from the similar reaction with  $(\text{CO}_2\text{iso-Bu})_2$ , and of AcH from the reaction with  $(\text{CO}_2\text{Et})_2$ . Reaction of the Grignard reagent from 50 g. mesityl bromide and 6.5 g. Mg with 30 g.  $(\text{CO}_2\text{Me})_2$  gave after 16 hrs. refluxing 16.1 g. mixed mesitylene and  $(\text{CO}_2\text{Me})_2$ , and 6 g. Me-2,4,6-trimethylphenylglyoxylate, b. 140-50°, which on hydrolysis with 5% alc. KOH gave the free acid, m. 116-17° (from  $\text{CS}_2$ ); the aq. soln. gave 12 g. Mg oxalate dihydrate. Addn. of the Grignard reagent from 62 g. 1-BiC<sub>11</sub>H<sub>7</sub> and 6.6 g. Mg in Et<sub>2</sub>O to 30 g.  $(\text{CO}_2\text{Me})_2$  in Et<sub>2</sub>O, followed by refluxing 16 hrs. and decompn. with 10% AcOH, gave 3.5 g. crude Me-1-naphthylglyoxylate, b. 200-40° (which on hydrolysis with 5% alc. KOH gave the free acid, m. 102-6° (from H<sub>2</sub>O)), and 25 g. crude (10 g. pure) bi-1-naphthoyl, m. 192-4° (from PhMe), b. 240-300°. A similar reaction with 25 g. bromomesitylene, 3.5 g. Mg, and 30 g.  $(\text{CO}_2\text{Ph})_2$  in Et<sub>2</sub>O gave 1.5 g. crude Ph-2,4,6-trimethylphenylglyoxylate, b. 180-220°, which on hydrolysis with 5% alc. KOH gave the free acid, m. 118-17° (from  $\text{CS}_2$ ); the reaction products also included 8 g. PhOH and much Mg oxalate. G. M. Kosolapoff

SHKLYUDOV, R.

We are getting ready to receive new grain and corn in an organized way and to store it without losses. Muk.-elev. prom. 26 no.6:5  
Je '60. (MIRA 13:12)

1. Machal'nik Stavropol'skogo krayevogo upravleniya khleboproduktov.  
(Grain--Storage) (Corn (Maize)--Storage)

SHKLYUDOV, R.

Improvements in the technology of treating hybrid and  
graded corn seed at the factories of Stavropol Territory.  
Muk. elev. prom. 28 no.7:7-9 J1 '62. (MIRA 15:9)

1. Stavropol'skoye krayevoye upravleniye khleboproduktov.  
(Stavropol Territory--Corn (Maize))  
(Stavropol Territory--Grain handling)

512

SH<sup>K</sup>YU DOV

**END**