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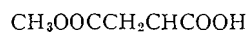
ADDENDUM: IMPROVED SYNTHESIS OF *N*-ALKYL-ASPARTIC ACIDS

C. J. ABSHIRE AND L. BERLINGUET

(Ref. Can. J. Chem. 40, 163 (1962))

The following, additional new compounds have been prepared by the methods previously described (1, 2).

TABLE I
N-Substituted aspartic acid β -methyl esters



	R	Formula	Yield (%)	Melting point (°C)	% nitrogen	
					Calculated	Found
I		$\text{C}_{14}\text{H}_{17}\text{NO}_4$	54	188-189	5.32	5.51
II		$\text{C}_{14}\text{H}_{17}\text{NO}_4$	71	224-225	5.32	5.52
III		$\text{C}_{13}\text{H}_{17}\text{NO}_5$	95	207-208	5.24	5.27
IV		$\text{C}_{15}\text{H}_{18}\text{N}_2\text{O}_4$	77	148-150	9.65	10.00
V		$\text{C}_{13}\text{H}_{25}\text{NO}_4$	45	152-154	5.40	5.70
VI		$\text{C}_{10}\text{H}_{13}\text{NO}_5$	45	186-187	6.17	6.36

TABLE I (Concluded)

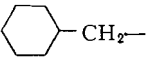
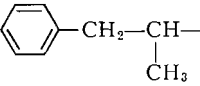
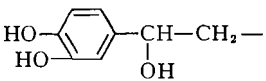
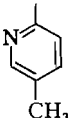
	R	Formula	Yield (%)	Melting point (°C)	% nitrogen	
					Calculated	Found
VII		$C_{12}H_{21}NO_4$	45	184–185	5.76	5.93
VIII		$C_{14}H_{19}NO_4$	37	186–189	5.28	5.26
IX	$HO-(CH_2)_5-CH_2-$	$C_{11}H_{21}NO_5$	67	180–182	5.66	5.79
X		$C_{13}H_{17}NO_7$	34	139–140	4.68	4.98

TABLE II
N-Substituted aspartic acids
 $HOOCCH_2CHCOOH$
 $\quad \quad \quad |$
 $\quad \quad \quad NH$
 $\quad \quad \quad |$
 $\quad \quad \quad R$

R*	Formula	Yield (%)	Melting point (°C)	% nitrogen	
				Calculated	Found
I	$C_{13}H_{15}NO_4$	60	213–214	5.62	5.42
II	$C_{13}H_{15}NO_4$	53	200–206	5.62	5.67
III	$C_{12}H_{15}NO_5$	78	206–207	5.53	5.30
IV	$C_{14}H_{18}N_2O_4$	61	226–227	10.14	10.20
V	$C_{12}H_{23}NO_4$	72	168–170	5.71	5.57
VI	$C_9H_{11}NO_5$	58	155–157	6.57	6.50
VII	$C_{11}H_{19}NO_4$	53	194–195	6.11	6.10
VIII	$C_{13}H_{17}NO_4$	90	160–165	5.57	5.36
IX	$C_{10}H_{19}NO_5$	95	72–74	6.01	5.80
X	$C_{12}H_{15}NO_7$	77	>300	4.91	4.61
	$C_{10}H_{12}N_2O_4$	49	168–170	12.50	12.30

*For the structure, see Table I.

ACKNOWLEDGMENTS

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