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Solutions were apparently stable at room temperature for at least one week. Reproducible data were obtained only if this procedure was followed.

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Some Alkanesulfinic Acids and their Derivatives¹

By C. S. MARVEL AND N. A. MEINHARDT

In connection with a study of alkanesulfinic acids as activators in an oxidation-reduction type polymerization recipe² we have had occasion to prepare the C_8 to C_{18} even-numbered carbon straight-chain members of the alkanesulfinic acid series and have characterized them with derivatives. The methods of preparation for the acids and derivatives are those recently described for 1-dodecanesulfinic acid.³

1-Octanesulfinic acid and 1-decanesulfinic acid are low melting and rapidly become colored in air. They obviously oxidize and/or rearrange very quickly and they have only been prepared in a crude state. Their derivatives, however, have been obtained as pure crystalline compounds.

Experimental.—The magnesium salts of the alkanesulfinic acids were prepared by the method of Houlton and Tartar⁴ and converted into the various derivatives by standard methods.³ The results of the work are presented in the tables.

This series of compounds is unstable and decomposes on standing for a few days. This makes their analysis unsatisfactory.

Table I Alkanesulfinic Acids RSO₂H

	***	A == 1 == = =									
from Mg salt.			Carbon		Hydrogen		Sulfur				
Decane	%	М. р., °С.	Calcd.	Found	Calcd.	Found	Calcd.	Found			
1-Tetra-	65.5	48-48.4	64.12	64.46	11.43	11.51	12.2	12.06			
1-Hexa-	58	54-55	66.21	65.90	11.71	11.58	11.05	11.15			
1-Octa.	69.2	60-60.5	67.92	67.68	11.94	12.14	10.05	10.20			

TABLE II

N,N-DI-(1-ALKANESULFONYL)-HYDROXYLAMINES (RSO2)2NOH										
	Vield based on sodium salt, %	М. р., °С.	Carbon Caled. Found		Analyses, % Hydrogen Calcd. Found		Nitrogen Calcd, Found			
1-Octane	77.1	64-65	49.9	50.0 2	9.09	9.20	3.64	3.43		
1-Decane	91,8	6869	54.44	54.76	9.73	9.45	3.18	3.06		
1-Tetradecane	90	74-75	60.75	60.77	10.68	10.77	2.53	2.45		
1-Hexadecane	77	75-75.5	63.1	62.87	11.00	10.83	2.30	2.16		
1-Octadecane	78.8	83-84	65.00	65.25	11.28	11.10	2.10	2.06		

TABLE III

O-ACETYL-N, N-DI-(1-ALKANESULFONYL)-HYDROXYLAMINES (RSO2)2NOCOCH3

Vield based on		Analyses, %							
nydroxylamine, %	M. p., °C.	Caled.	Found	Caled.	Found	Caled.	Found		
65,6	24-25	50.58	50.19	8.66	8,6	3.29	3.00		
72.3	43-45	54.66	54.45	9.31	9.66	2.90	2.69		
62	54-57.5	60.49	61.25	10.25	10.75	2.35	2.42		
65.9	74-75	62.66	63.05	10.59	11.32	2.14	2.19		
70.4	78-79	64.5	65.10	10.89	11.39	1.98	2.27		
	Yield based on hydroxylamine, 65.6 72.3 62 65.9 70.4	Yield based on hydroxylamine, M. p., °C. 65.6 24-25 72.3 43-45 62 54-57.5 65.9 74-75 70.4 78-79	Yield based on hydroxylamine, M. p., °C. Calcd. % M. p., °C. Calcd. 65.6 24-25 50.58 72.3 43-45 54.66 62 54-57.5 60.49 65.9 74-75 62.66 70.4 78-79 64.5	Yield based on hydroxylamine, % M. p., °C. Carbon Calcd. Carbon Found 65.6 24-25 50.58 50.19 72.3 43-45 54.66 54.45 62 54-57.5 60.49 61.25 65.9 74-75 62.66 63.05 70.4 78-79 64.5 65.10	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $		

TABLE IV

TRI-(1-ALKANESULFONYL)-AMINE OXIDES (RSO2)2NO

		Analyses. %								
	M. p.,	Carbon		Hyd	rogen	Nitrogen				
	°C.	Calcd.	Found	Calcd.	Found	Calcd.	Found			
l-Octane	39-40	51.3	51.14	9.26	8.90	2.49	2.76			
l-Decane	47-48	55.8	55.86	9.77	9.57	2.17	2.35			
l-Tetradecane	69-70	62.0	62.3	10.70	10.45	1.72	1.76			
-Hexadecane	74.5-76	64,25	64.3	11.02	11.25	1.56	1.74			
I-Octadecane	76–77	66. 0 6	66.10	11.31	11.49	1.43	1.64			

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(2) Office of the Publication Board, U. S. Department of Commerce, Item P. B. No. 1636—Activation of Buna-S Polymerization in Mersolat Emulsion with Reducing Agents, Sherlock Swann, Jr., and N. M. Elias.

TABLE V

1-ALKANESULFONYLACETIC ACIDS RSO₂CH₂CO₂H

	based on sodium	M. p., Carbon Hydroge							
	salt, %	°C.	Calcd.	Found	Calcd.	Found			
1-Octane	82	9596	50.9	51.2	8.47	8.57			
1-Decane	52.6	102-103.5	54.6	54.73	9.09	9.09			
1-Tetradecane	47.7	110-111	60.0	60.10	10.00	9.91			
1-Hexadecane	47.5	113-114	62.1	62.18	10.34	10.43			
1-Octadecane	45	116-117	63.8	64.49	10.62	10.69			

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