two discrepancies. The △ R values for sodium oleyl sulfate and sodium elaidyl sulfate, of 93 and 94% purity, respectively, are lower than might be expected.

TABLE IV

Summary of Properties of Sodium Salts of Sulfated Alcohols

Sulfating agent		Purity %	Foam height (15), immediate, 0.1%, 60°, hard water of 100 p.p.m., mm.	Sinking time (16), 0.1%, 25°, distilled water, seconds	Detergency Terg-O-Tometer, 0.1%, 60°, hard water of 100 p.p.m., △ R
NaDDS[1]	$ClSO_3H$	....	240	13	28.6
NaTDS[2]	$ClSO_3H$	....	246	12	34.2
NaHDS[3]	$ClSO_3H$	....	177	59	35.9
NaODS[4]	$ClSO_3H$	....	151	280	38.6
NaOS[5]	Pyridine · SO_3	96	226	19	37.1
NaES[6]	Pyridine · SO_3	100	202	20	37.6
NaOS	NH_2SO_3H	93	198	17	35.8
NaOS	Dioxane · SO_3	90	224	19	37.1
NaES	Dioxane · SO_3	94	209	30	35.0
NaOS	$ClSO_3H$ + NaCl	66	209	21	35.4
NaES	$ClSO_3H$ + NaCl	73	210	26	35.7
NaOS	$ClSO_3H \cdot CO(NH_2)_2$	87	217	19	36.0
NaES	$ClSO_3H \cdot CO(NH_2)_2$	91	224	21	36.6
NaOS	$H_2SO_4 \cdot CO(NH_2)_3$	54	213	30	33.0
NaOS	SO_3	....[a]	73	179	11.7
NaOS	$ClSO_3H$	....[a]	0	48	16.0

[1, 2, 3, 4, 5, 6] Abbreviations for sodium dodecyl, tetradecyl, hexadecyl, octadecyl, oleyl, and elaidyl sulfates, respectively.

[a] Low iodine numbers indicated extensive reaction involving the double bond.

Similar results were obtained at 0.25% concentration in hard water of 300 p.p.m., and with another standard soiled cotton [G.D.C. No. 26 (4)] at 0.1% in hard water of 100 p.p.m., and at 0.25% in 300 p.p.m.

Summary

Sodium oleyl sulfate (or the trans isomer) is a desirable component in a mixture of sulfated tallow alcohols, principally because of its ready solubility in water at room temperature.

The use of moderate sulfating agents, which can be thought of as complexes formed with either sulfur trioxide, chlorosulfonic acid, or sulfuric acid, has been shown to give products having good detergent and surface-active properties. Desirable properties are generally related to the purity of the product and to the extent to which side reactions at the double bond are minimized or avoided.

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CORRECTION

In the paper, "Estimating Carbonyl Compounds in Rancid Fats and Foods," J. American Oil Chemists' Society, *31*, 88 (1954), the a_M for saturated monocarbonyl compounds reported has been found to be low. Using repeatedly recrystallized derivatives of five n-aliphatic aldehydes, C_6-C_{12}, the following values are obtained: at 430 mμ 21,000, and at 460 mμ 16,300. Recheck on the unsaturated aldehyde, crotonal, shows no change for the previously reported values of 21,350 and 28,100, respectively.

The equations given for the calculation of concentrations when measurements are made in 1-cm. cuvettes with the Beckman DU Spectrophotometer become:

$$\text{Unsaturated} = \frac{3.067\ A_{460} - 2.381\ A_{430}}{.469}$$

and

$$\text{Saturated} = 3.067\ A_{460} - 1.724 \text{ unsaturated}.$$

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