TABLE V

Analytical Results of Surfactants in Commercial Shampoos and Household Detergents

Sample	DMA (%)	DDA (%)	DDAO (%)	SDS (%)	SDMT (%)	SNDG (%)	DDAB (%)	UCIB (%)
1	–	0.98	–	15.1	–	–	1.78	–
2	–	0.99	–	14.9	–	–	1.16	–
3	–	2.05	13.3	–	–	–	–	–
4	–	2.81	1.2	–	–	–	–	–
5	–	4.23	–	–	–	–	1.37	–
6	–	5.81	–	–	29.0	–	8.90	–
7	0.95	4.80	–	9.51	–	0.90	1.35	–
8	–	2.51	–	8.65	–	–	–	1.65

Taken as the average of 2 replicate analyses.

REFERENCES

1. Desmond, C.T., and W.T. Borden, JAOCS 41:552 (1964).
2. Yoshikawa, K., T. Nishina and K. Takehara, Yukagaku 15:65 (1966).
3. Newburger, S.H., J. Assoc. Offic. Agr. Chemists 41:664 (1958).
4. Gabriel, D.M., J. Soc. Cosmet. Chem. 25:33 (1974).
5. Fudano, S., and K. Konishi, J. Chromatogr. 51:211 (1970), 56:51 (1971), 62:467 (1971), 66:153 (1972), 71:93 (1972) and 77:351 (1973).
6. Mutter, M., Chromatographia 2:208 (1969).
7. Kirby, D.H., F.D. Barbuscio, W. Metzger and J. Hourihan, Cosmet. Perfum. 90:19 (1975).
8. Parris, N., W.M. Linfield and R.A. Barford, Anal. Chem. 42: 2228 (1977).
9. Nakae, A., and K. Kunihiro, J. Chromatogr. 134:459 (1977), 152:137 (1978) and 156:167 (1978).
10. Thomas, D., and J.-L. Rocca, Analusis 7:386 (1979).
11. Parris, N., J. Liq. Chromatogr. 3:1743 (1980).
12. Nakamura, K., Y. Morikawa and I. Matsumoto, Yukagaku 29: 501 (1980).
13. Nakamura, K., Y. Morikawa and I. Matsumoto, JAOCS 58:72 (1981).
14. Nakamura, K. and Y. Morikawa, Ibid. 59:64 (1982).

[Received May 12, 1982]

Letter to the Editor

Sirs:

The use of ethanol in gasoline as an octane enhancer is becoming widespread and well established. However, anhydrous ethanol (200 proof) is required for the range of storage and operating conditions normally encountered. The search for methods or materials for eliminating water separation when using moist ethanol continues unabated.

In the course of studying a variety of potential uses for a methyl glucoside-based emulsifier/surfactant, we found that it is capable of producing clear mixtures of unleaded gasoline and 95% ethanol. Typical synthesis of this emulsifier follows. The reaction is carried out in a 1 L, 3 neck round-bottom flask equipped with N_2 sparge tube, mechanical stirrer (glass blade), thermometer, H_2O-cooled condenser and Dean-Stark trap. To the flask is added 500 g (0.568 mol) neutralized, bleached soy oil and 0.25 g Li_2CO_3. After heating to 286 C, three 33.3 g portions of α-methyl glucoside (total: 0.515 mol) are added at 10 min intervals and heated at 286-296 C until 1 volume of the reaction mixture is soluble in 3 volumes of methanol (1.0 hr). The product has a Gardner color of 11 and a Gardner-Holt viscosity of N.

No exhaustive study was made of either this product or varied gasoline-alcohol combinations. However, this alcoholysis product gave a clear solution or microemulsion when combined with 90 mL unleaded gasoline and 10 mL 190 proof ethanol as indicated.

Description	Results at 23 C
5.0 g Product added	slightly cloudy
After 15 min	clear (no water droplets visible)
After 1.0 hr	clear (no water droplets visible)
After 24 hr	clear (no water droplets visible)
After reshaking	clear (no water droplets visible)

A glycerol/soy oil alcoholysis product, made according to a similar procedure using 0.5 mol oil/1.16 mol glycerol, gave only a cloudy solution plus water droplets with the identical alcohol/gasoline blend.

C. Deane Roth
A. E. Staley Mfg. Co.
2200 E. Eldorado
Decatur, IL 62525