

EXPERIMENTAL PART

Experiment No. 1

Approximately 10 g. of anhydrous BaCl<sub>2</sub> were weighed into a distillation flask to which was added toluene and exactly ten m.l. of water. The contents were distilled for one hour. Exactly 10.00 m.l. of water were recovered.

It was thereby shown that BaCl<sub>2</sub> does not interfere with the complete recovery of water by the distillation method.

Experiment No. 2

Similar tests to determine the completeness of the recovery of water were made upon anhydrous sodium acetate (10.0 g.). Exactly 10.00 m.l. of water were distilled with (1) benzene and (2) toluene. The results shown below indicate that anhydrous sodium acetate also relinquishes all water during the test.

	Benzene	Toluene
Time required	5 hrs	45 minutes
Water recovered	9.95 m.l.	10.02 m.l.

Experiment No. 3

A series of distillation tests were made upon a variety of soaps for

Test No.	Kind of Soap	Percents of Water Found	
		A.O.C.S. Method	Barium Chloride Method
1	Liquid Coconut Oil Soap	59.2	59.8
		59.6 Av. 59.4	59.2 Av. 59.5
2	Soybean Oil Soap +5% borax	59.3	60.1
		59.2 Av. 59.25	60.4 Av. 60.25
3	Corn Oil Jelly Soap	68.2	68.2
		68.0 Av. 68.1	67.8 Av. 68.0
4	Hard Vegetable Paste Soap	35.4	35.2
		35.6 Av. 35.5	35.4 Av. 35.3
5	Corn Oil Soap (+10 m.l. H <sub>2</sub> O)	19.4	19.6
6	Powdered Tallow Soap (+10 m.l. H <sub>2</sub> O)	4.3	4.7
		4.6 Av. 4.45	4.6 Av. 4.65
7	Soap Powder containing 50% T.S.P. (+10 m.l. H <sub>2</sub> O)	2.3	2.3
		2.2 Av. 2.25	2.3 Av. 2.3

the purpose of comparing the percents of water found by the two methods. In certain cases of dry soaps and those low in water content an additional 10 m.l. of water was added for the test and in these instances corrections have been made in the table.

Test No. 2 indicates that borax is difficult to dehydrate by the A.O.C.S. distillation method, while this is not experienced in the BaCl<sub>2</sub> Method since the borax is converted into the non-hydrated barium meta-borate. This suggests that there may be other builders similarly difficult to dehydrate when the sodium acetate method is used.

Conclusion

The use of anhydrous barium chloride for an anti-foaming agent in the distillation method for determining the amount of water in soap, is superior to sodium acetate in respect to speed, ease of handling the test, and finally in respect to leaving more cleanable apparatus. It offers another advantage in that anhydrous BaCl<sub>2</sub> is more easily prepared than is anhydrous sodium acetate.

REFERENCES

- (1) Hart, J. Ind. Eng. Chem. 10,598 (1918).
- (2) Dean & Stark, J. Ind. Eng. Chem. 12,486-90 (1920).
- (3) Graham, J. Assoc. Offic. Agri. Chem. 9, 127-37 (1925)
- (4) Church & Wilson, Soap 7, No. 11, 3507 (1931).
- (5) F. C. Fuchs, Eng. Mining J. 106,357 (1918).

# Report of the Uniform Methods and Planning Committee

OCTOBER 4, 1939

THE Uniform Methods and Planning Committee have considered the recommendations of the Soap Analysis Committee and have concurred in their recommendations, which follow:

1. That the McNicoll method for rosin, as modified by the committee, be adopted as a tentative method of the A.O.C.S.
2. That the method for determination of iodine number, prescribed by the Fat Analysis Committee, be included in the Soap Analysis Methods for use on soap fatty acids. Preparation of fatty acids for iodine number determination will be essentially the same as for titer.
3. *Matter volatile at 105° C.* (Oven Method) specifies drying to "constant weight." It

was agreed to define this as follows: "Constant weight is attained when successive heating for one hour periods shows a loss (or gain) of not more than 0.1%."

4. *Matter Insoluble in Water.* Some confusion has existed in the interpretation of this method. Some laboratories have been proceeding with this determination on the sample used under "Matter Insoluble in Alcohol," that is, after drying and weighing the latter. The method will be revised to emphasize the fact that a *new sample* should be taken for the water insoluble determination.
5. *Screen Test.* The Committee has approved the deletion of the reference to the Ro Tap

machine and the method will refer to the use of any suitable type screen test machine. Also, since specifications may call for use of sieves other than those now specified in the method, it was agreed to add a note that, when called for, other sieves may be used in the determination as now written.

Upon motion, duly seconded, the recommendations were adopted by a vote of the Society.

- J. T. R. Andrews
- E. B. Freyer
- C. P. Long
- T. C. Law
- A. K. Schwartz
- H. P. Trevithick
- J. J. Vollertsen, Chairman