

16.13.05

**AOAC Official Method 992.12
Light Filth in Sauces
Containing Soy Sauce, Thickeners, and Spices**

Flotation Method
First Action 1992
Final Action 1996

See Table 992.12 for the results of the interlaboratory study supporting acceptance of the method.

A. Principle

Oils are removed from the sauce by pretreatment with wetting agent over steam and then by wet-sieving. Residue is transferred to Wildman trap flask with 40% isopropanol, and light filth is extracted with Na₄EDTA and mineral oil. The flotation liquid is trapped and filtered, and the filth is counted.

B. Reagents

(a) *Wetting agent*.—Sodium tetradecyl sulfate (Tergitol Anionic 4, Sigma Chemical Co., or equivalent).

(b) *Tetrasodium EDTA solution*.—Na₄EDTA in 40% isopropanol, 945.75C(z) (see 16.1.01).

C. Pretreatment

Add 100 g well-mixed test portion to 1.5 L beaker. Add 980 mL H₂O and 20 mL Tergitol Anionic 4, (a), to beaker. Heat over steam bath 30 min. Stir beaker contents occasionally with glass rod.

D. Isolation

Rinse rod with water, and wet-sieve beaker contents portionwise, 970.66B(a) (see 16.1.02), onto No. 230 plain-weave sieve,

945.75B(r) (see 16.1.01), with a forceful stream of hot tap water, if necessary. Wet-sieve until foaming subsides, excess oil is removed, and no further reduction of residue is noted.

Work residue to side of sieve with gentle spray of hot tap water. Wet residue with 40% isopropanol and quantitatively transfer residue to 2 L trap flask, 945.75B(h)(4) (see 16.1.01), with 40% isopropanol. Fill flask to 400 mL by rinsing sides of flask with 40% isopropanol. Boil flask contents gently 10 min with magnetic stirring. Remove flask from heat and immediately add 50 mL Na₄EDTA solution, B(b), slowly down stirring rod. Hand stir contents 1 min with gentle rotary motion, ensuring that residue does not adhere to sides of flask. Let stand 5 min. Fill flask to 800 mL by rinsing sides of flask with 40% isopropanol. Add 50 mL mineral oil, 945.75C(p) (see 16.1.01), down stirring rod. Stir contents magnetically, 970.66B(c) (see 16.1.02), 3 min. Fill flask with 40% isopropanol down stirring rod. Stir contents intermittently every 5 min for 20 min. Bring stirring rod to midpoint of flask, rinse rod with 40% isopropanol and clamp, and let stand 10 min. Trap off into 400 mL beaker and rinse neck, wafer, and rod with 40% isopropanol. Add 35 mL mineral oil and hand stir contents 1 min to disperse oil. Repeat procedures from “Fill flask with 40% isopropanol ” as for first trapping.

Filter beaker contents onto ruled paper, 945.75B(i) (see 16.1.01), washing 400 mL beaker; and filter washings with 40% isopropanol. Examine paper microscopically at ca 30 .

Reference: *J. AOAC Int.* 76, 47(1993).

Table 992.12. Interlaboratory study results for light filth in sauces containing soy sauce, thickeners, and spices^a

Spike added	\bar{x}	s _r	s _R	RSD _r	RSD _R
Rat hairs					
5	4.5 (4.2)	0.7 (0.8)	0.8 (1.0)	15.6 (19.0)	17.8 (23.8)
10	7.9 (7.8)	1.5	2.0 (2.1)	19.0 (19.2)	25.3 (26.9)
15	11.9 (11.8)	1.2 (1.3)	2.4 (2.5)	10.1 (11.0)	20.2 (21.2)
Insect fragments					
5	4.9 (4.6)	0.8 (0.6)	1.0 (0.7)	16.3 (13.0)	20.4 (15.2)
15	13.6 (14.2)	1.0	1.5 (1.0)	7.4 (7.0)	11.0 (7.0)
30	28.8	1.6 (1.0)	1.6 (1.0)	5.6 (3.5)	5.6 (3.5)

^a Third-party's counts in parentheses.