

16.12.01

AOAC Official Method 971.34

Filth in Candy

Flotation Method

First Action 1971

Final Action 1988

(a) *In hard candy, gum drops, gum, starch, or pectin-base candies.*—Dissolve in boiling HCl (1 + 70), filter through rapid paper on Hirsch funnel, and examine microscopically.

(b) *In hard candy difficult to filter by (a) (e.g., licorice candy).*—Proceed as in (c).

(c) *All water-insoluble candy except those containing confectioners corn flakes, wheat bran, or other cereal fillers, and those whose major constituent, excluding chocolate coating, consists primarily of finely ground nutmeats (e.g., peanut butter, almond paste, etc.).*—Weigh 225 g test portion into 1.5–2 L beaker. Add 1 L 5% solution of Tergitol, **945.75C(bb)(I)** (see 16.1.01), and heat in steam bath 10 min. Stir 5–10 min on magnetic stirrer-hot plate. Sieve portionwise on No. 230 sieve, **945.75B(r)** (see 16.1.01). If residue on sieve is small, transfer directly to ruled filter paper; otherwise, transfer quantitatively to 2 L trap flask, using 40% isopropanol. Bring volume to 1 L with 40% isopropanol and add 50 mL HCl. Gently stir on magnetic stirrer-hot plate while heating to full boil. Immediately transfer flask to cool stirring unit and add 40 mL light mineral oil, **945.75C(p)** (see 16.1.01). Stir magnetically, **970.66B(c)** (see 16.1.02), 2 min. Let stand 1 min; then slowly fill flask with 40% isopropanol by running liquid down stoppered rod while top of stopper is maintained just above liquid. After filling flask, gently stir settled plant material 5–10 s with stoppered rod. Let stand undisturbed 2 min and immediately trap off. Add 25 mL light mineral oil, stir by hand gently 30 s, and let stand 10 min. Repeat trapping. Wash flask neck thoroughly with isopropanol and transfer washings to beaker containing trappings. Filter onto ruled paper and examine microscopically.

(d) *Water-insoluble candies containing confectioners corn flakes, wheat bran, or other cereal fillers, and those whose major constituent, excluding the chocolate coating, consists primarily of finely ground nutmeats (e.g., peanut butter, almond paste, etc.).*—Proceed as in (c) through sieving on No. 230 sieve. Wash residue on sieve with isopropanol. Form filter paper around 600 mL beaker, **945.75B(j)** (see 16.1.01), moistening with H₂O to make paper pliable. Insert paper into 91 mm Büchner, wash with isopropanol, and aspirate to near dryness. Quantitatively transfer residue on sieve to filter paper cup with isopropanol and add enough isopropanol to cover residue. After 1 min, apply vacuum until dripping ceases. Place paper cup containing sieved residue in 1 L beaker, add 200 mL CHCl₃, and boil 5 min on steam bath. After few min of cooling, lift paper, drain, and transfer to 200 mL fresh CHCl₃. Repeat 5 min boil and drain. Return paper cup to Büchner and apply vacuum until dripping ceases. Cover residue with isopropanol 1 min, reapply vacuum, and continue to aspirate 5 min after visible dripping ceases. Proceed as in (c), beginning with “ transfer quantitatively to 2 L trap flask, using 40% isopropanol.” Continue as in (c), except after bringing contents of flask to full boil, cool to room temperature in cold water bath, and use flotation liquid, **945.75C(k)** (see 16.1.01), in place of mineral oil.

(e) *In chocolate candy coating.*—Heat 400 mL CH₂Cl₂ in 800 mL beaker to 30–35°C and keep at this temperature. Place test portion of candy in wire basket (ca 8 cm diameter 3 cm high) made from No. 8 screen and with wire handles. Move basket up and down through CH₂Cl₂ until chocolate coating dissolves. Rinse each candy center with fine stream of CH₂Cl₂ from wash bottle and save center. Repeat with balance of test portion. Stir CH₂Cl₂–chocolate suspension and pour through No. 140 sieve. Transfer residue from sieve to filter paper and examine microscopically. Examine candy centers by appropriate method, (a), (b), (c), or (d).

Reference: *JAOAC* **54**, 568(1971).