47.3.20 - Food Additives: Direct / Chemical Preservatives

AOAC Official Method 931.08 Formaldehyde in Food

First Action 1931

(*See also* **964.21** [*see* 44.5.14].)

A. Preparation of Test Portion

If food is solid or semisolid, macerate 100 g with 100 mL H_2O in mortar. Transfer to 800 mL Kjeldahl flask, acidify with H_3PO_4, add 1 mL excess, connect with condenser through trap, and slowly distil 50 mL. For milk, dilute 100 mL with 100 mL H_2O, and acidify and distil as for solids. With other liquid foods, acidify 200 mL and distil as for solids.

B. Chromotropic Acid Test

(**a**) *Reagent.*—Prepare saturated solution of 1,8-dihydroxynaphthalene-3,6-disulfonic acid (ca 500 mg/100 mL) in ca 72% H_2SO_4 (pour 150 mL H_2SO_4 into 100 mL H_2O and cool). Solution is light straw-colored.

(**b**) *Test.*—Place 5 mL reagent in test tube and add, with mixing, 1 mL distillate, **A**. Place in boiling H_2O bath 15 min, and observe during heating period. Presence of HCHO is indicated by appearance of light to deep purple (depth of color depending on amount of HCHO present).

Reference:
Z. Anal. Chem. **110,** 22(1937).

C. Hehner-Fulton Test

(**a**) *Oxidizing solution.*—To cold H_2SO_4 add, in small portions, equal volume saturated Br_2-H_2O, cooling throughout operation.

(**b**) *Test.*—To 6 mL cold H_2SO_4 add 5 mL distillate, **A**, slowly and with cooling. Place 5 mL mixture in test tube, and add, slowly and with cooling, 1 mL aldehyde-free milk, then 0.5 mL oxidizing solution. Mix. Purplish-pink indicates HCHO.

Reference:
Ind. Eng. Chem. Anal. Ed. **3,** 199(1931).

CAS-50-00-0 (formaldehyde)