Method 4.0

Acid Insoluble Ash

Purpose: To determine, as ash, the insoluble residue remaining after treatment of total ash with hydrochloric acid.

A. Apparatus:

1. Apparatus described in Total Ash Method 3.0.
2. Funnel 60° angle, 65 to 75 mm. I.D.
3. Filter paper ashless, 9 to 11 cm. in diameter (Whatman 42).
4. Watch glass.
5. Fume hood or equivalent venting system.
6. Analytical balance, sensitivity 0.0001g (0.1 mg).

B. Reagents:

1. Concentrated hydrochloric acid (HCl), ACS grade, dilute 1 volume with 2.5 volumes of distilled water.
2. Distilled water.

C. Preparation of Sample:

1. Use total ash obtained in Method 3.0.

D. Procedure:

1. Add 25 mL of the HCl solution to the ashed sample and boil for 5 minutes. Cover the dish with a watch glass to prevent spattering.
2. Filter through an ashless filter paper. Wash with hot distilled water until the washings are acid free.
3. Transfer the filter paper and its contents to the original dish, dry and ignite in a muffle furnace at 600° $\pm$ 20°C until the ash is carbon free.

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4. When carbon-free ash is obtained, remove the dish to a desiccator, cool to room temperature and weigh immediately.

E. Calculation:

$$\text{Acid insouble ash \%} = \frac{\text{Wt. of acid insoluble ash (g)}}{\text{Wt. of spice sample (g)}} \times 100$$

F. Statistics:

TBD

G. Notes:

N/A

H. Reference:

AOAC Official Methods of Analysis (1995) 43.1.05 (941.12).