International Standard



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# Fruits, vegetables and derived products – Determination of ascorbic acid content – Part 2: Routine methods

Fruits, légumes et produits dérivés — Détermination de la teneur en acide ascorbique — Partie 2: Méthodes pratiques

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## Fruits, vegetables and derived products – Determination of ascorbic acid content – Part 2: Routine methods



1 Scope and field Papplication

This part of ISO 6557 specifies two routine methods for the determination of the ascorbin acid content<sup>1)</sup> of fruits, vegetables and derived products:

**method** A: 2,6-dichlorophenolinophenol titrimetric method;

**method B**: 2,6-dichlorophenolindophenol spectrometric method after extraction with xylene.

Method A can only be used in the absence of certain interferences (see 2.6).

Method B is applicable to derived fruit and vegetable products in strongly coloured solutions.

### 2 Method A: 2,6-dichlorophenolindophenol titrimetric method

### 2.1 Principle

Extraction of the ascorbic acid from a test portion using either oxalic acid solution or metaphosphoric acid-acetic acid solution. Titration with 2,6-dichlorophenolindophenol dyestuff until a salmon pink colour is obtained.

#### 2.2 Reagents

All reagents shall be of recognized analytical grade. The water used shall be distilled water or water of at least equivalent purity.

#### 2.2.1 Extraction solution.

Use either a 2 % (m/m) oxalic acid solution or a metaphosphoric acid/acetic acid solution prepared as follows.

Dissolve 15 g of metaphosphoric acid in 40 ml of glacial acetic acid and 200 ml of water in a 500 ml one-mark volumetric flask, make up to the mark with water and filter immediately through filter paper into a glass bottle.

This solution can be kept for 7 to 10 days if stored in a refrigerator.

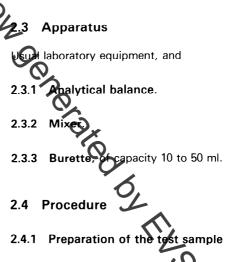
#### 2.2.2 2,6-dichlorophenolindophenol, dyestuff solution.

Dissolve 50 mg of the sodium salt of 2,6-dichlorophenolindophenol in 150 ml of hot (50 to 60  $^{\circ}$ C) water containing 42 mg of sodium hydrogen carbonate in a 200 ml one-mark volumetric flask, make up to the mark with water and filter. Store the solution in a dark brown bottle in a refrigerator.

As the dyestuff decomposes with time, fresh solution should be prepared periodically.

2.2.3 Ascorbic acid, 1 g/l standard solution.

Weigh, to the nearest 0,01 mg, 50 mg of ascorbic acid which has been stored in a desiccator, transfer quantitatively to a 50 ml one-mark volumetric flask and make up to the mark with the extraction solution (2.2.1).



If necessary, remove seeds and hard seed-cavity walls and then thoroughly mix the sample. Filter, and proceed with the determination on the filtrate.

Allow frozen or deep frozen products to thaw in a closed vessel and add the liquid formed during this process to the product before mixing.

#### 2.4.2 Test portion

Weigh, to the nearest 0,1 mg, 10 to 100 g of the sample.

<sup>1)</sup> The ascorbic acid is determined as dehydroascorbic acid.