MALTOL


SYNONYMS

INS No. 636

DEFINITION

Maltol is obtained by chemical synthesis

Chemical names 3-Hydroxy-2-methyl-4-pyrone

C.A.S. number 118-71-8

Chemical formula C₆H₆O₃

FUNCTIONAL USES

Flavour enhancer, flavouring agent (see 'Flavouring agents' monograph No. 1480)

DESCRIPTION

White crystalline powder having a characteristic caramel-butterscotch odour

PURITY

Water (Vol. 4) Not more than 0.5% (Karl Fischer)

Sulfated ash (Vol. 4) Not more than 0.2% (use 5 g sample)

Lead (Vol. 4) Not more than 1 mg/kg
Determine using an AAS/ICP-AES technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the methods described in Volume 4 under “General Methods, Metallic Impurities”.

**METHOD OF ASSAY**

**Standard solution**
Transfer about 50 mg of Maltol Reference Standard (available from the United States Pharmacopoeia, 12601 Twinbrook Parkway, Rockville, MD 20852, USA), or equivalent, accurately weighed, into a 250-ml volumetric flask, dilute to volume with 0.1 N hydrochloric acid, and mix. Pipet 5 ml of this solution into a 100-ml volumetric flask, dilute to volume with 0.1 N hydrochloric acid, and mix.

**Assay solution**
Transfer about 50 mg of the sample, accurately weighed, into a 250-ml volumetric flask, dilute to volume with 0.1 N hydrochloric acid, and mix. Pipet 5 ml of this solution into a 100-ml volumetric flask, dilute to volume with 0.1 N hydrochloric acid, and mix.

**Procedure**
Determine the absorbance of each solution in a 1-cm quartz cell at the absorption maximum (about 274 nm) using 0.1 N hydrochloric acid as the blank.

Calculate the percent of Maltol in the sample by the formula:

\[
\% \text{ of Maltol} = 100 \times \frac{W_s \times A_A}{W_A} \times \frac{A_S}{A_S \times W_A}
\]

where

- \( A_A \) is the absorbance of the sample solution
- \( A_S \) is the absorbance of the standard solution
- \( W_A \) is the weight in mg of sample in the sample solution
- \( W_S \) is the weight in mg of the reference standard in the standard solution