

CALCIUM CYCLAMATE

Prepared at the 46th JECFA (1996), published in FNP 52 Add 4 (1996) superseding specifications prepared at the 24th JECFA (1980), published in FNP 17 (1980). Metals and arsenic specifications revised at the 63rd JECFA (2004). A group ADI of 0-11 mg/kg bw for cyclamic acid and its calcium and sodium salts (as cyclamic acid) was established at the 26th JECFA (1982)

SYNONYMS

INS No. 952(ii)

DEFINITION

Chemical names

Calcium cyclohexylsulfamate, calcium cyclohexanesulfamate

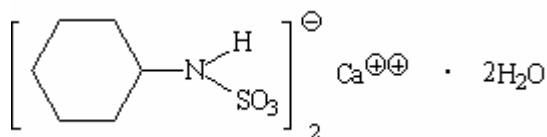
C.A.S. number

139-06-0

Chemical formula

$C_{12}H_{24}CaN_2O_6S_2 \cdot 2H_2O$

Structural formula



Formula weight

432.57

Assay

Not less than 98.0% and not more than 101.0% on the anhydrous basis

DESCRIPTION

White colourless crystals or crystalline powder. Approximately 30 times sweeter than sucrose

FUNCTIONAL USES Sweetener

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)

Soluble in water, sparingly soluble in ethanol

Precipitate formation

To 10 ml of a 1 in 100 solution of the sample add 1 ml of hydrochloric acid TS, mix, add 1 ml of barium chloride TS. The solution remains clear, but upon the addition of 1 ml sodium nitrite TS, a white precipitate is formed

Test for calcium (Vol. 4)

Passes test

PURITY

Loss on drying (Vol. 4)

Not less than 6.0% and not more than 9.0% (140°, 2 h)

Cyclohexylamine
(Vol. 4)

Not more than 10 mg/kg

Transfer 25 g of the sample into a 100 ml volumetric flask, dissolve in water, dilute to volume with water, and mix. Use this solution as the test preparation.

Dicyclohexylamine
(Vol. 4)

Not more than 1 mg/kg

Lead (Vol. 4)

Not more than 1 mg/kg

Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, "Instrumental Methods."

METHOD OF ASSAY

Dissolve about 0.4 g of the sample accurately weighed, in a mixture of 50 ml of water and 5 ml of dilute hydrochloric acid TS and titrate with 0.1M sodium nitrite. Add the last ml of titrant dropwise until a blue colour is produced immediately when a glass rod dipped into the titrated solution is streaked on a piece of starch iodide test paper or alternatively the end point may be detected electro-metrically. When the titration is complete, the end-point is reproducible after the mixture has been allowed to stand for 1 min. Each ml of 0.1M sodium nitrite is equivalent to 19.83 mg of $C_{12}H_{24}CaN_2O_6S_2$, calculated on the anhydrous basis.