

# CALCIUM GLUCONATE

*Prepared at the 51st JECFA (1998), published in FNP 52 Add 6 (1998) superseding specifications prepared at the 18th JECFA (1974), published in NMRS 54B (1975) and republished in FNP 52 (1992). Group ADI "not specified" for glucono-delta-lactone and gluconates, excluding ferrous gluconate, established at the 51st JECFA in 1998.*

**SYNONYMS** INS No. 578

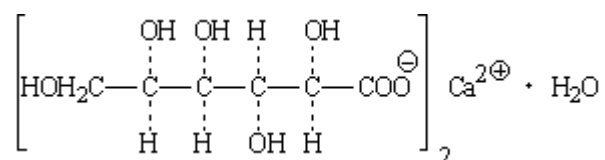
## DEFINITION

Chemical names Calcium di-D-gluconate monohydrate

C.A.S. number 299-28-5

Chemical formula  $C_{12}H_{22}CaO_{14} \cdot H_2O$

Structural formula



Formula weight 448.39

Assay Not less than 98% and not more than 102% on the dried basis

**DESCRIPTION** Odourless, white, crystalline granules or powder, stable in air

**FUNCTIONAL USES** Acidity regulator, firming agent, sequestrant, nutrient supplement

## CHARACTERISTICS

### IDENTIFICATION

Solubility (Vol. 4) Soluble in water; insoluble in ethanol

Test for calcium (Vol. 4) Passes test

Test for gluconate  
(Vol. 4) Passes test

### PURITY

Loss on drying (Vol. 4) Not more than 2.0% (105°, 16 h)

Reducing substances  
(Vol. 4) Not more than 1.0% calculated as D-glucose (Method I)

Lead (Vol. 4) Not more than 2 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**

Weigh accurately about 0.5 g of the dried sample and dissolve in 5 ml of dilute hydrochloric acid. Add 50 ml of water, 25 ml of sodium hydroxide TS and about 0.1 g of 2-hydroxy-1-(2'-hydroxy-4'-sulfo-1'-naphthylazo)-3-naphthoic acid. Titrate with 0.05 M EDTA immediately. At the end-point, the red colour changes completely to blue. Each ml of 0.05 M EDTA is equivalent to 22.42 mg of  $C_{12}H_{22}CaO_{14} \cdot H_2O$ .