CALCIUM SULFATE

Prepared at the 19th JECFA (1975), published in NMRS 55B (1976) and in FNP 52 (1992). Metals and arsenic specifications revised at the 63rd JECFA (2004). ADI 'not limited' was established at the 17th JECFA (1973).

SYNONYMS INS No. 516

DEFINITION

Chemical names	Calcium sulfate
C.A.S. number	7778-18-9
Chemical formula	Anhydrous: $CaSO_4$ Dihydrate: $CaSO_4 \cdot 2H_2O$
Formula weight	Anhydrous: 136.14 Dihydrate: 172.18
Assay	Not less than 99.0% after drying

DESCRIPTION Fine, white to slightly yellow-white, odourless powder

FUNCTIONAL USES Yeast food, dough conditioner, firming agent, sequestrant

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)	Slightly soluble in water; insoluble in ethanol
Test for calcium (Vol. 4)	Passes test
Test for sulfate (Vol. 4)	Passes test

PURITY

Loss on drying (Vol. 4)	Anhydrous: Not more than 1.5% (250° to constant weight) Dihydrate: Between 19 and 23% (250° to constant weight)
Fluoride (Vol. 4)	Not more than 30 mg/kg (Method I or III)
Selenium (Vol. 4)	Not more than 30 mg/kg Test 0.2 g of the sample as directed in the Limit Test Method II)
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 Dissolve about 250 mg of the sample, accurately weighed, in 100 ml of water

ASSAY

and 4 ml of dilute hydrochloric acid TS, boil if necessary to effect solution, and cool. Add 15 ml of sodium hydroxide TS, 40 mg of murexide indicator preparation and 3 ml of naphthol green TS, and titrate with 0.05 M disodium ethylenediaminetetraacetate until the solution is deep blue in colour. Each ml of 0.05 M disodium ethylenediaminetetra-acetate is equivalent to 6.807 mg of $CaSO_4$.