TRIAMMONIUM CITRATE

Prepared at the 27th JECFA (1983), published in FNP 28 (1983) and in FNP 52 (1992). Metals and arsenic specifications revised at the 59th JECFA (2002). A group ADI 'not limited' for citric acid and its calcium, potassium, sodium and ammonium salts was established at the 23rd JECFA (1979)

SYNONYMS Citric acid triammonium salt; ammonium citrate tribasic; INS No. 380

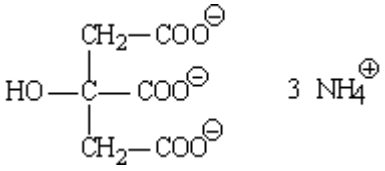
DEFINITION

Chemical names: Triammonium citrate, triammonium salt of 2-hydroxypropan-1,2,3-tricarboxylicacid

C.A.S. number: 3458-72-8

Chemical formula: $C_6H_{17}N_3O_7$

Structural formula:



Formula weight: 243.22

Assay: Not less than 97.0%

DESCRIPTION White crystals or crystalline powder

FUNCTIONAL USES Buffering agent

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4): Freely soluble in water

Test for citrate (Vol. 4): Passes test

Test for ammonium (Vol. 4): Passes test

PURITY

Oxalate (Vol. 4): Not more than 0.04%

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

Dissolve about 3.5 g of the sample, accurately weighed, in 50 ml of water, add 50 ml of 1 N sodium hydroxide, boil for 15 min or until ammonia ceases to be evolved, add sufficient 1 N sulfuric acid to make the solution acid to phenolphthalein TS, boil for 5 min, cool, and titrate with 1 N sodium hydroxide, using phenolphthalein TS as an indicator. Each ml of 1 N sodium hydroxide is equivalent to 81.07 mg of $C_6H_{17}N_3O_7$.