POTASSIUM SULFATE

Prepared at the 29th JECFA (1985), published in FNP 34 (1986) and in FNP 52 (1992). Metals and arsenic specifications revised at the 63rd JECFA (2004). An ADI 'not specified' was established at the 29th JECFA (1985).

SYNONYMS INS No. 515(i)

DEFINITION

Chemical names	Potassium sulfate
C.A.S. number	7778-80-5
Chemical formula	K_2O_4S
Structural formula	K_2SO_4
Formula weight	174.25
Assay	Not less than 99.0%

DESCRIPTION Colourless or white crystals or crystalline powder

FUNCTIONAL USES Salt substitute, acidity regulator

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)	Freely soluble in water, insoluble in ethanol
pH (Vol. 4)	5.5 - 8.5 (1 in 20 solution)
Test for potassium (Vol. 4)	Passes test
Test for sulfate (Vol. 4)	Passes test

PURITY

Lead (Vol. 4)	Not more than 2 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 principles of methods described in Volume 4 (under “General Methods, Metallic Impurities”).
Selenium (Vol. 4)	Not more than 30 mg/kg Test 0.2 g of the sample as directed in the Limit Test (Method II)

METHOD OF ASSAY Weigh accurately about 0.5 g of the sample, dissolve in 200 ml of water, add 1 ml of hydrochloric acid, and heat to boiling. Gradually add, in small portions and while stirring constantly, an excess of hot barium chloride TS (about 8 or 9 ml), and heat the mixture on a steam bath for 1 h. Collect the precipitate on a filter, wash until free from chloride, dry, ignite, and weigh. The weight of the barium sulfate so obtained, multiplied by 0.7466, indicates its equivalent of K_2SO_4.