POTASSIUM METABISULFITE

Prepared at the 53rd JECFA (1999) and published in FNP 52 Add 7 (1999), superseding tentative specifications prepared at the 51st JECFA (1998), published in FNP 52 Add 6 (1998). Group ADI 0-0.7 mg/kg bw as SO2 for sulfite established at the 51st JECFA in 1998.

SYNONYMS INS No. 224

DEFINITION

Chemical names	Potassium disulfite, potassium pentaoxodisulfate, potassium pyrosulfite
C.A.S. number	16731-55-8
Chemical formula	$K_2S_2O_5$
Formula weight	222.33
Assay	Not less than 90%

DESCRIPTION Colourless free-flowing crystals, crystalline powder, or granules, usually having an odour of sulfur dioxide

FUNCTIONAL USES Antibrowning agent, antioxidant, preservative

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4)	Soluble in water; insoluble in ethanol
Test for potassium (Vol. 4)	Passes test
Test for sulfite (Vol. 4)	Passes test

PURITY

Water insolubles	Dissolve 20 g of the sample in 200 ml of water. The solution should be clear with only a trace of suspended matter.
Thiosulfate	Not more than 0.1% A 10% solution of the sample should remain clear on acidification with sulfuric or hydrochloric acid
Iron (Vol. 4)	Not more than 10 mg/kg Determine as directed in the Limit Test using 0.5 ml of Iron Standard Solution (5 µg Fe) in the control
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.”

Selenium

Not more than 5 mg/kg
See description under TESTS

TESTS

PURITY TESTS

Selenium

Reagents:
Hydrochloric acid, hydrazinium sulfate, standard selenium solution (100 µg Se/ml)

Procedure
Weigh 2.0 ± 0.1 g of sample and transfer to a 50-ml beaker. Add 10 ml water, 5 ml hydrochloric acid and boil to remove SO_2.
Into a second beaker, weigh 1.0 ± 0.1 g of sample, add 0.05 ml standard selenium solution and proceed as above.

To each beaker add 2 g hydrazinium sulfate and warm to dissolve. Let stand for 5 min. Dilute the contents of each beaker to 50 ml in a Nessler tube and compare the colour of the two solutions. The sample should be less pink than the sample with the added standard.

METHOD OF ASSAY

Weigh 250 mg of the sample, add to 50.0 ml of 0.1 N iodine in a glass stoppered flask, and stopper the flask. Allow to stand for 5 min, add 1 ml of dilute hydrochloric acid TS and titrate the excess iodine with 0.1 N sodium thiosulfate, using starch TS as the indicator. Each ml of 0.1 N iodine is equivalent to 5.558 mg of $K_2S_2O_5$.