VEGETABLE CARBON

Prepared at the 37th JECFA (1990), published in FNP 52 (1992). Metals and arsenic specifications revised at the 59th JECFA (2002). No ADI was allocated at the 31st JECFA (1987)

SYNONYMS Vegetable black, INS No. 153

DEFINITION Produced by the carbonization of vegetable material such as wood, cellulose residues, peat and coconut and other shells; the raw material is carbonized at high temperatures; consists essentially of finely divided carbon; may contain minor amounts of nitrogen, hydrogen and oxygen. Some moisture may be absorbed on the product after manufacture. It may be activated at high temperature in presence of steam or carbon dioxide.

Chemical names Carbon

Chemical formula C

Formula weight 12.01

Assay Not less than 95% calculated on a dried and ash-free basis

DESCRIPTION Black, odourless powder

FUNCTIONAL USES Colour

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Insoluble in water; insoluble in organic solvents

Burning When heated to redness it burns slowly without a flame

PURITY

Loss on drying (Vol. 4) Not more than 12% (120°, 4 h)

Acidity or alkalinity To 2.0 g add 40 ml of water and boil for 5 min. Cool, restore to the original volume with carbon dioxide-free water and filter. Reject the first 20 ml of the filtrate. To 10 ml of the filtrate add 0.25 ml of bromothymol blue solution TS and 0.25 ml of 0.02 N sodium hydroxide. The solution is blue. Not more than 0.75 ml of 0.02 N hydrochloric acid is required to change the colour of the indicator to yellow.

Ash (Vol. 4) Not more than 4%
Proceed as directed for Ash (total) using 625° as the ignition temperature

Alkali soluble coloured substance The filtrate obtained by boiling 2 g of the sample with 20 ml N sodium hydroxide and filtering shall be colourless

Higher aromatic The extract obtained by extraction of 1 g of the product with 10 g pure

hydrocarbons	cyclohexane in a continuous extraction apparatus shall be colourless, and the fluorescence of the extract in ultraviolet light is not more intense than that of the reference solution containing 0.100 mg of quinine sulfate in 1000 ml of 0.01 N sulphuric acid.
Arsenic (Vol. 4)	Not more than 3 mg/kg
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	Measure total carbon in a dried sample by one of several methods or commercial instruments for carbon analysis, such as, instruments for C,H,O determinations or combustion/gravimetric carbon analysis. Dry the sample at 120^{o} for 4 h before taking an accurately weighed analytical sample of an amount suitable for the specific method or instrument.