POWDERED CELLULOSE

Prepared at the 20th JECFA (1976), published in FNS 1B (1977) and in FNP 52 (1992). Metals and arsenic specifications revised at the 57th JECFA (2001). An ADI 'not specified' was established at the 20th JECFA (1976)

SYNONYMS INS No. 460(ii)

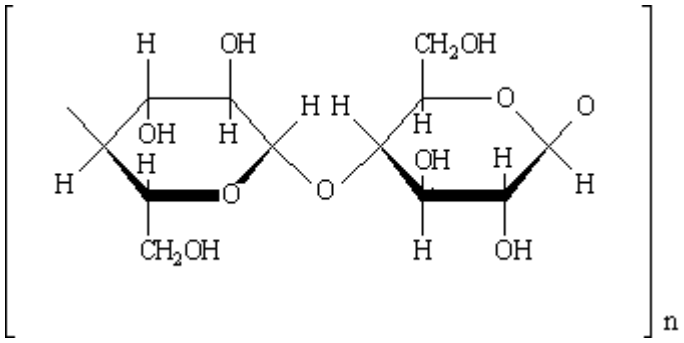
DEFINITION

Chemical names Cellulose, linear polymer of 1:4 linked glucose residues

C.A.S. number 9004-34-6

Chemical formula $(C_{12}H_{20}O_{10})_n$

Structural formula



Formula weight $(324)_n$ (n is predominantly 500 and greater)
Of the order of 1.6×10^5 and greater

Assay Not less than 92% $(C_{12}H_{20}O_{10})_n$

DESCRIPTION Purified, mechanically disintegrated cellulose prepared by processing alpha cellulose obtained as a pulp from fibrous plant materials; occurs as a white, odourless substance consisting of fibrous particles which may be compressed into self-binding tablets which disintegrate rapidly in water; exists in various grades exhibiting degrees of fineness ranging from a dense free flowing powder to a coarse, fluffy non-flowing material.

FUNCTIONAL USES Anticaking agent, dispersing agent, texturizing agent

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Insoluble in water, ethanol, ether and dilute mineral acids. Slightly soluble in sodium hydroxide solution

Suspension formation Mix 30 g of the sample with 270 ml of water in a high-speed (12,000 rpm) power blender for 5 min. The resultant mixture will be either a free-flowing suspension or a heavy, lumpy suspension which flows poorly, if at all, settles only slightly and contains many trapped air bubbles. If a free flowing

suspension is obtained, transfer 100 ml into a 100-ml graduated cylinder and allow to stand for 1 h. The solids settles and a supernatant liquid appears.

PURITY

Loss on drying (Vol. 4)	Not more than 7% after drying (105°, 3 h)
pH (Vol. 4)	5.0 - 7.5 Mix 10 g of the dried sample, accurately weighed, with 90 ml water and allow to stand with occasional stirring for 1 h.
Water soluble substances	Not more than 1.5% Mix about 6 g of the sample, previously dried, with 90 ml of recently boiled and cooled water and allow to stand with occasional stirring for 10 min. Filter, discard the first 10 ml of filtrate and pass the filtrate through the same filter a second time if necessary to obtain a clear filtrate. Evaporate a 15 ml portion of the filtrate to dryness in a tared evaporation dish on a steam bath, dry at 105° for 1 h. Not more than 15 mg of residue is obtained.
Total ash (Vol. 4)	Not more than 0.3% (at approximately 800° to constant weight).
Starch	Not detectable To 20 ml of the mixture obtained in the Identification Test B add a few drops of iodine TS and mix. No purplish-to-blue or blue colour is produced.
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.”