

## Potassium Alginate

Algin

$(C_6H_7O_6K)_n$

Equiv wt, calculated, 214.22

Equiv wt, actual (avg), 238.00

INS: 402

CAS: [9005-36-1]

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### DESCRIPTION

The potassium salt of alginic acid (see the monograph for *Alginic Acid*) occurs as a white to yellowish, fibrous or granular powder. It is nearly odorless and tasteless. It dissolves in water to form a viscous, colloidal solution. It is insoluble in alcohol and in hydroalcoholic solutions in which the alcohol content is greater than 30% by weight. It is insoluble in chloroform, in ether, and in acids having a pH lower than about 3.

**Functional Use in Foods** Stabilizer; thickener; emulsifier.

### REQUIREMENTS

#### Identification

A. To 5 mL of a 1 in 100 solution add 1 mL of calcium chloride TS. A voluminous, gelatinous precipitate is formed.

B. To 10 mL of a 1 in 100 solution add 1 mL of 2 N sulfuric acid. A heavy gelatinous precipitate is formed.

C. Potassium alginate meets the requirements of *Identification Test C* in the monograph for *Alginic Acid*.

**Assay** It yields not less than 16.5% and not more than 19.5% of carbon dioxide (CO<sub>2</sub>), corresponding to between 89.2% and 105.5% of potassium alginate (equiv wt 238.00), calculated on the dried basis.

**Arsenic** (as As) Not more than 3 mg/kg.

**Heavy Metals** (as Pb) Not more than 0.002%.

**Lead** Not more than 5 mg/kg.

**Loss on Drying** Not more than 15.0%.

## TESTS

**Assay** Proceed as directed in the *Alginates Assay*, Appendix IIIC. Each mL of 0.25 N sodium hydroxide consumed in the assay is equivalent to 28.75 mg of potassium alginate (equiv wt 238.00).

**Arsenic** A *Sample Solution* prepared as directed for organic compounds meets the requirements of the *Arsenic Test*, Appendix IIIB.

**Heavy Metals** Prepare and test a 1-g sample as directed in *Method II* under the *Heavy Metals Test*, Appendix IIIB, but use nitric acid instead of sulfuric acid to wet the sample prior to ignition, and cautiously ignite in a platinum crucible. Any color does not exceed that produced in a control (*Solution A*) containing 20 µg of lead ion (Pb).

**Lead** A *Sample Solution* prepared as directed for organic compounds meets the requirements of the *Lead Limit Test*, Appendix IIIB, using 5 µg lead ion (Pb) in the control.

**Loss on Drying**, Appendix IIC Dry at 105° for 4 h.

**Packaging and Storage** Store in well-closed containers.