

## EDIBLE GELATIN

*Prepared at the 14th JECFA (1970), published in NMRS 48B (1971) and in FNP 52 (1992). Metals and arsenic specifications revised at the 63rd JECFA (2004). An ADI 'not limited' was established at the 14th JECFA (1970)*

### SYNONYMS

Gelatin edible

### DEFINITION

A protein produced by partial hydrolysis of collagen in skin, tendons, ligaments, bones, etc. of animals. The article of commerce may further specify special requirements for criteria such as gel strength and limits of iron, calcium, lactose or other chemical or microbiological requirements, such as requirements concerning selected pathogenic organisms including *Salmonella*, *Staphylococcus aureus*, *Clostridium* spp. and mould spores. Information is requested on the microbiological criteria given below, which are tentative only.

C.A.S. number

9000-70-8

### DESCRIPTION

Sheets, flakes, or shreds, or coarse to fine powder, faintly yellow or amber in colour, the shade varying in depth according to the particle size and with a slight characteristic bouillon-like odour; stable in air when dry, but is subject to microbial decomposition when moist or in solution.

### FUNCTIONAL USES

Stabilizer, gelling agent, emulsifying agent, crystallization inhibitor

### CHARACTERISTICS

#### IDENTIFICATION

##### Solubility (Vol. 4)

Insoluble in cold water, but swells and softens when immersed, gradually absorbing from 5 to 10 times its own weight of water; soluble in hot water, forming a jelly on cooling; soluble in acetic acid; insoluble in ethanol, chloroform and ether

##### Precipitate formation

To a solution (1 in 100) add trinitrophenol TS or a solution of potassium dichromate (1 in 15) previously mixed with about one-fourth its volume of dilute hydrochloric acid: a yellow precipitate is formed  
To a solution (1 in 100) add mercuric nitrate solution; a white precipitate is formed which develops a brick red colour on warming.

##### Development of turbidity

To a solution (1 in 5,000) add tannic acid TS; the solution becomes turbid

##### Evolution of ammonia

When heated with soda lime, ammonia is evolved

#### PURITY

##### Loss on drying (Vol. 4)

Not more than 18% (100-105°, 6 h)

##### Odour and water insoluble substances

A hot solution (1 in 40) is free from any disagreeable odour; when viewed in a layer 2 cm thick, shows not more than a slight opalescence

##### Sulfur dioxide (Vol. 4)

Not more than 40 mg/kg

<u>Ash</u> (Vol. 4)	Not more than 2%
<u>Arsenic</u> (Vol. 4)	Not more than 1 mg/kg (Method II)
<u>Lead</u> (Vol. 4)	Not more than 1.5 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."
<u>Cadmium</u> (Vol. 4)	Not more than 0.5 mg/kg
<u>Mercury</u> (Vol. 4)	Not more than 0.15 mg/kg
<u>Microbiological criteria</u> (Vol. 4)	Standard plate count: $<10^4$ /g <i>Enterobacteriaceae</i> or bacteria of the <i>coli-aerogenes</i> group: $<10$ /g Lancefield group D <i>streptococci</i> : $<10^2$ /g