

## GELATIN (7202)

### Intended Use

**Gelatin** is a protein source and solidifying agent for use in preparing microbiological culture media.

### Product Summary and Explanation

Gelatin is a protein of uniform molecular constitution derived chiefly by the hydrolysis of collagen.<sup>1</sup> Collagens are a class of albuminoids found abundantly in bones, skin, tendons, cartilage and similar animal tissues.<sup>1</sup> Koch introduced Gelatin into bacteriology when he invented the gelatin tube method in 1875 and the plate method in 1881. This innovation, a solid culture method, became the foundation for investigating bacterial growth.<sup>1</sup> Gelatin-based media were soon replaced by media containing agar as the solidifying agent.

Gelatin is used in culture media for determining gelatinolysis (elaboration of gelatinases) by bacteria. Several media containing Gelatin are specified in standard methods for multiple applications.<sup>2,3</sup>

### Principles of the Procedure

The melting point of a 12% concentration of gelatin is between 28 and 30°C, allowing it to be used as a solidifying agent. Certain microorganisms elaborate gelatinolytic enzymes (gelatinases) which hydrolyze gelatin, causing liquefaction of a solidified medium. Gelatin is also used as a nitrogen and amino acid source.

### Precaution

1. For Laboratory Use.

### Quality Control Specifications

**Dehydrated Appearance:** Powder is homogeneous, free-flowing and very light yellow to yellow-beige.

**Prepared Appearance:** Prepared medium is very light to light yellow, clear to moderately hazy, with none to light precipitate.

**pH (2% Solution at 25°C):** 4.5 - 5.5

**Moisture:** 12% Maximum

**Ash:** 2% Maximum

**Bloom:** 265 – 285 GMS

**Viscosity:** 43 – 54 MPS

**Solubility:** 12% (w/v) in DI water soluble upon heating

### Cultural Response

Specification	Expected Results
Standard Plate Count	≤ 1000 cfu / gm
Coliforms	< 10 cfu / gm
<i>Salmonella</i>	Negative
<i>E. coli</i>	Negative

**Expected Cultural Performance as Nutrient Gelatin:**

Microorganism	Approx. Inoculum (CFU)	Expected Results	
		Growth	Gelatinase
<i>Staphylococcus aureus</i> ATCC 25923	~ 10 <sup>8</sup>	Growth	Positive
<i>Bacillus subtilis</i> ATCC 6633	~ 10 <sup>8</sup>	Growth	Positive
<i>Bacillus subtilis</i> ATCC 9372	~ 10 <sup>8</sup>	Growth	Positive
<i>Clostridium perfringens</i> ATCC 13124	~ 10 <sup>8</sup>	Growth	Positive
<i>Clostridium sporogenes</i> ATCC 11437	~ 10 <sup>8</sup>	Growth	Positive
<i>Escherichia coli</i> ATCC 25922	~ 10 <sup>8</sup>	Growth	Negative

**Test Procedure**

Refer to appropriate references for specific procedures using Gelatin.

**Results**

Refer to appropriate references for test results.

**Storage**

Store sealed container of Gelatin at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

**Expiration**

Refer to expiration date stamped on container. Gelatin should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to Gelatin in its intact container when stored as directed.

**Packaging**

<b>Gelatin</b>	<b>Code No.</b>	<b>7202A</b>	<b>500 g</b>
		<b>7202B</b>	<b>2 kg</b>
		<b>7202C</b>	<b>10 kg</b>

**References**

1. Gershenfeld, L., and L. F. Tice. 1941. Gelatin for bacteriological use. J. Bacteriol. 41:645-652
2. [www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalmanualBAM/default.htm](http://www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalmanualBAM/default.htm).
3. Eaton, A. D., L. S. Clesceri, and A. E. Greenberg (eds.). 1995. Standard methods for the examination of water and wastewater, 19<sup>th</sup> ed., American Public Health Association, Washington, D.C.

**Technical Information**

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.