

## YEAST EXTRACT (7184)

### Intended Use

**Yeast Extract** is an autolysate of yeast cells used in preparing microbiological culture media.

### Product Summary and Explanation

Yeast Extract is the water-soluble portion of autolyzed yeast. The autolysis is carefully controlled to preserve naturally occurring B-complex vitamins. Yeast Extract is prepared and standardized for bacteriological use and cell cultures, and is an excellent stimulator of bacterial growth. Yeast Extract is generally employed in the concentration of 0.3% - 0.5%. Yeast Extract is typically prepared by growing baker's yeast, *Saccharomyces* spp., in a carbohydrate-rich plant medium. The yeast is harvested, washed, and resuspended in water, where it undergoes autolysis, i.e., self-digestion using the yeast's enzymes. Yeast Extract is the total soluble portion of this autolytic action. The autolytic activity is stopped by a heating step. The resulting Yeast Extract is filtered clear and dried into a powder by spray drying.

Yeast Extract has been successful in culture media for bacterial studies in milk and other dairy products.<sup>1-5</sup> Several media containing Yeast Extract have been recommended for cell culture applications.<sup>6,7</sup>

### Principles of the Procedure

Yeast Extract provides vitamins, nitrogen, amino acids, and carbon in microbiological and cell culture media.

### Precaution

1. For Laboratory Use.

### Quality Control Specifications

#### **Physical and Chemistry:**

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

**Prepared Appearance (2% Solution):** Prepared medium is brilliant to clear, amber, without or with a slight precipitate.

Total Protein	62.5 to 73.8%
Total Nitrogen	10.0 to 11.8%
Amino Nitrogen	4.5 to 5.8%
Ash (excluding Chloride)	11.5 – 16.0%
Sodium Chloride	Less than 0.5%
pH (2% Solution)	6.8 to 7.2
Moisture	< 6.0%
Filterability (100 mL, 5% Solution)	Filterable through a 47 mm 0.2 micron filter under 15 inches vacuum within 2 minutes

#### **Microbiology:**

Standard Plate Count:	Less than 5000 CFU / G
<i>Salmonella</i> (per 25 g):	Negative
<i>Escherichia coli</i> :	Negative
Coagulase Positive Staphylococci:	Negative

### Growth Supporting Properties on Peptone Agar:

Microorganism	Expected Result
<i>Escherichia coli</i>	Good to excellent growth
<i>Staphylococcus aureus</i>	Poor to fair growth

### Test Procedure

Refer to appropriate references for specific procedures using Yeast Extract.

### Results

Refer to appropriate references for test results.

### Storage

Store sealed container of Yeast Extract 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. Yeast Extract should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to Yeast Extract in its intact container when stored as directed.

### Packaging

Yeast Extract	Code No.	7184A	500 g
		7184B	2 kg
		7184C	10 kg

### References

1. [www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalmanualBAM/default.htm](http://www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalmanualBAM/default.htm).
2. **Eaton, A. D., L. S. Clesceri, and A. E. Greenberg (eds.)**. Standard methods for the examination of water and wastewater, 19<sup>th</sup> ed. American Public Health Association, Washington, D.C.
3. **Vanderzant, C., and D. F. Splittstoesser (eds.)**. 1992. Compendium of methods for the microbiological examination of food, 3<sup>rd</sup> ed. American Public Health Association, Washington, D.C.
4. **Marshall, R.T. (ed.)**. Standard methods for the examination of dairy products, 16<sup>th</sup> ed. American Public Health Association, Washington, D. C.
5. **United States Pharmacopeia Convention, Inc.** 2001. The United States Pharmacopeias 25, National Formulary 2000-2001, p. 2337, United States Pharmacopeia Convention, Inc. Rockville, MD.
6. **Chan, L., P. F. Greenfield, and S. Reid.** 1998. Optimizing fed-batch production of recombinant proteins using the baculovirus expression vector system. *Biotechnology BioEngineering*, **59**: 178-188, John Wiley & Sons, Inc.
7. **Ikonomou, Bastin, Schneider, Agathose.** 2001. Design of efficient medium for insect cell growth and recombinant protein production, *In Vitro Cell Dev. Biol. Anim.*, **37**:549-559.

### 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)372-9200.