



## MAXIMUM RECOVERY DILUENT (7658)

### Intended Use

**Maximum Recovery Diluent (Peptone Saline Diluent)** is used as an isotonic diluent for maximum recovery of microorganisms.

### Product Summary and Explanation

Maximum Recovery Diluent provides the nutritious properties of peptone with the osmotic support of physiological saline. The low peptone concentration in the diluent at a pH of  $7.0 \pm 0.2$  reduces organism multiplication in the sample for at least one hour during the dilution stage.<sup>1,2</sup> The isotonic strength of the diluent ensures recovery and minimizes physiological shock normally experienced by microorganisms upon inoculation. The presence of peptone in Maximum Recovery Diluent provides viable counts to ensure accurate quantitative procedures are performed.

### Principles of the Procedure

Peptone is the nitrogen, carbon, vitamin, and mineral sources in Maximum Recovery Diluent. Sodium Chloride maintains the osmotic balance.

### Formula / Liter

Peptone..... 1.0 g  
Sodium Chloride ..... 8.5 g

Final pH:  $7.0 \pm 0.2$  at  $25^{\circ}\text{C}$

Formula may be adjusted and/or supplemented as required to meet performance specifications.

### Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

### Directions

1. Dissolve 9.5 g of the medium in one liter of purified water.
2. Heat with frequent agitation to obtain solution.
3. Autoclave at  $121^{\circ}\text{C}$  for 15 minutes.

### Quality Control Specifications

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

**Prepared Appearance:** Prepared medium is colorless, and trace hazy to clear with no ppt.

**Expected Cultural Response:** Cultures were held for 2 hours under ambient conditions, subcultured onto recovery media, and viable counts determined.

| Microorganism                           | Expected Growth             |
|---|-----------------------------|
| <i>Escherichia coli</i> ATCC® 25922     | recovered at initial levels |
| <i>Staphylococcus aureus</i> ATCC®25923 | recovered at initial levels |
| <i>Bacillus subtilis</i> ATCC®6633      | recovered at initial levels |

The organisms listed are the minimum that should be used for quality control testing.

### Test Procedure

Refer to appropriate references for specific dilution procedures in food testing.<sup>1,2,3,4</sup>

### Results

Refer to appropriate references for test results.

### **Storage**

Store sealed bottle containing the dehydrated medium 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 the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

### **Limitation of the Procedure**

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

### **Packaging**

| <b>Maximum Recovery Diluent</b> | <b>Code No.</b> | <b>7658A</b> | <b>500 g</b> |
|---------------------------------|-----------------|--------------|--------------|
|                                 |                 | <b>7658B</b> | <b>2 kg</b>  |
|                                 |                 | <b>7658C</b> | <b>10 kg</b> |

### **References**

1. **Straka, R. P. and Stokes, J. L.** 1957. Rapid destruction of bacteria in commonly used diluents and its elimination. Appl. Microbiol. 5:21-25.
2. **Patterson, J. T., and J. A. Cassells.** 1963. An examination of the value of adding peptone to diluents used in the bacteriological testing of bacon curing brines. J. Appl. bacteriol. 26:493-497.
3. **Vanderzant, C., and D. F. Splittstoesser (eds.)**, 1992. Compendium of methods for the microbiological examination of foods, 3<sup>rd</sup> ed. American Public Health Association, Washington, D.C.
4. **U.S. Food and Drug Administration.** 1995. Bacteriological analytical manual, 8<sup>th</sup> ed., AOAC International, Gaithersburg, MD.

### **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.