

## D/E NEUTRALIZING BROTH (7562)

### **Intended Use**

**D/E Neutralizing Broth** is used for testing and neutralizing of antiseptics and disinfectants.

### **Product Summary and Explanation**

D/E Neutralizing Broth was developed by Dey and Engley to neutralize a broad spectrum of disinfectants and preservative antimicrobial chemicals,<sup>1</sup> including quaternary ammonium compounds, phenolics, iodine, chlorine preparations, mercurials, formaldehyde, and glutaraldehyde. D/E Neutralizing media neutralize higher concentrations of residual antimicrobials when compared with other standard neutralizing formulations, such as Lethen media, Thioglycollate media, and Neutralizing Buffer.<sup>2,3</sup>

Total neutralization of disinfectants is critical. Disinfectant residues can result in a false-negative (no-growth) test. D/E Neutralizing Broth effectively neutralizes the inhibitor action of disinfectant carryover,<sup>4,5</sup> allowing differentiation between bacteriostasis and the true bactericidal action of disinfectant chemicals. This is a critical characteristic to consider when evaluating a disinfectant. D/E Neutralizing Broth is recommended for use in disinfectant evaluations, environmental sampling (swab and contact plate methods), and testing of water-miscible cosmetics.<sup>6</sup>

### **Principles of the Procedure**

Enzymatic Digest of Casein and Yeast Extract provide nitrogen, carbon, vitamins, and minerals in D/E Neutralizing Broth. Dextrose is a source of fermentable carbohydrate. Sodium Thioglycollate neutralizes mercurials. Sodium Thiosulfate neutralizes iodine and chlorine. Sodium Bisulfite neutralizes formaldehyde and gluteraldehyde. Lecithin neutralizes quaternary ammonium compounds and Polysorbate 80 neutralizes phenols, hexachlorophene, formalin, and, with Lecithin, ethanol. Bromcresol Purple is used as a colorimetric indicator to demonstrate the production of acid from the fermentation of dextrose.

### **Formula / Liter**

Enzymatic Digest of Casein .....	5 g
Yeast Extract.....	2.5 g
Dextrose.....	10 g
Sodium Thioglycollate.....	1 g
Sodium Thiosulfate .....	6 g
Sodium Bisulfite .....	2.5 g
Lecithin.....	7 g
Bromcresol Purple .....	0.02 g

Final pH: 7.6 ± 0.2 at 25°C

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

### **Supplement / Liter**

Polysorbate 80.....5 g

### **Precautions**

1. For Laboratory Use.
2. HARMFUL. Harmful if swallowed. Risk of injury to eyes. May cause sensitization by inhalation. Irritating to eyes, respiratory system, and skin.

### **Directions**

1. Dissolve 34 g of the medium and 5 g of Polysorbate 80 in one liter of purified water.
2. Mix Thoroughly.
3. Autoclave at 121°C for 15 minutes.

### **Quality Control Specifications**

**Dehydrated Appearance:** Powder is homogeneous, free flowing, may form soft lumps, and beige to tan.

**Prepared Appearance:** Prepared medium is opaque, may appear flocculent upon sitting, and lavender to blue-purple.

**Expected Cultural Response:** Cultural response in D/E Neutralizing Broth at 35 ± 2°C and examined for growth after 18 - 48 hours incubation.

Microorganism	Response
<i>Pseudomonas aeruginosa</i> ATCC® 27853	growth
<i>Bacillus subtilis</i> ATCC® 9372	growth
<i>Escherichia coli</i> ATCC® 25922	growth
<i>Staphylococcus aureus</i> ATCC® 25923	growth
<i>Salmonella typhimurium</i> ATCC® 14028	growth

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

### **Test Procedure**

D/E Neutralizing Broth is used in a variety of procedures. Consult appropriate references for complete information.<sup>6</sup>

### **Results**

Refer to appropriate references and procedures for results.

### **Storage**

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place the 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 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**

D/E Neutralizing Broth	Code No.	7562A	500 g
		7562B	2 kg
		7562C	10 kg

### **References**

1. Engley, F. B., Jr. and B. P. Dey. 1970. A universal neutralizing medium for antimicrobial chemicals. Presented at the Chemical Specialties Manufacturing Association (CSMA) Proceedings. 56<sup>th</sup> Mid-Year Meeting.
2. Dey, B. P. and F. B. Engley, Jr. 1983. Methodology for recovery of chemically treated *Staphylococcus aureus* with neutralizing medium. Appl. Environ. Microbiol. **45**:1533-1537.
3. Dey, B. P., and F. B. Engley, Jr. 1978. Environmental sampling devices for neutralization of disinfectants. Presented at the 4<sup>th</sup> International Symposium on Contamination Control.
4. Dey, B. P., and F. B. Engley, Jr. 1994. Neutralization of antimicrobial chemicals by recovery media. J. Microbiol. Methods. **19**:51-58.
5. Dey, B. P., and F. B. Engley, Jr. 1995. Comparison of Dey and Engley (D/E) Neutralizing Medium to Lethen Medium and Standard Methods Medium for recovery of *Staphylococcus aureus* from sanitized surfaces. J. Ind. Microbiol. **14**:21-25.
6. Curry, A. S., J. G. Graf, and G.N. McEwen, Jr. (eds.). 1993. CTFA Microbiology Guidelines. The Cosmetic, Toiletry and Fragrance 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.