

Instructions for Use

CRITERION™ M ENDO BROTH

Cat. no. C7550	CRITERION™ m Endo Broth	96gm
Cat. no. C7551	CRITERION™ m Endo Broth	500gm
Cat. no. C7552	CRITERION™ m Endo Broth	2kg
Cat. no. C7553	CRITERION™ m Endo Broth	10kg
Cat. no. C7554	CRITERION™ m Endo Broth	50kg

INTENDED USE

Hardy Diagnostics CRITERION™ m Endo Broth is recommended for the enumeration of coliforms in water by membrane filtration.

This dehydrated culture medium is a raw material intended to be used in the making of prepared media products, which will require further processing, additional ingredients, or supplements.

SUMMARY

CRITERION™ m Endo Broth follows the formula of the Millipore Filter Corporation.⁽¹⁾ It is used for selectively isolating coliforms from water and other specimens using the membrane filtration technique. m Endo Broth is specified by the American Public Health Association (APHA) for the standard total coliform membrane filtration procedure for testing water and bottled water.^(2,3) APHA also specifies using m Endo Broth in the delayed-incubation total coliform procedure by adding sodium benzoate to make m Endo preservative medium.⁽²⁾ The U.S. Environmental Protection Agency specifies using m Endo Broth in the total coliform water testing methods using single step, two-step, and delayed incubation membrane filtration methods.^(4,5)

The medium is composed of yeast extract, pancreatic digest of casein, and peptic digest of animal tissue which supply necessary growth nutrients. Lactose is added as a source of fermentable carbohydrate. The phosphates are included as buffers. Sodium chloride is added to maintain osmotic balance. Sodium deoxycholate and sodium lauryl sulfate are added as inhibitors. Basic fuchsin in the pH indicator and sodium sulfite is added to decolorize the basic fuchsin solution.

FORMULA

Gram weight per liter:	48.0gm/L
Lactose	12.5gm
Pancreatic Digest of Casein	10.0gm
Peptic Digest of Animal Tissue	10.0gm

Sodium Chloride	5.0gm
Dipotassium Phosphate	4.375gm
Sodium Sulfite	2.1gm
Yeast Extract	1.5gm
Monopotassium Phosphate	1.375gm
Basic Fuchsin	1.05gm
Sodium Deoxycholate	0.1gm
Sodium Lauryl Sulfate	0.05gm

Final pH 7.2 +/- 0.2 at 25°C.

* Adjusted and/or supplemented as required to meet performance criteria.

STORAGE AND SHELF LIFE

Store the sealed bottle(s) containing dehydrated culture medium at 2-30°C. Dehydrated culture medium is very hygroscopic. Keep lid tightly sealed. Protect dehydrated culture media from moisture and light. The dehydrated culture media should be discarded if it is not free-flowing or if the color has changed from its original pinkish-purple.

Store prepared media at 2-8°C. **in the dark.**

The expiration date on the product label applies to the product in its intact packaging when stored as directed. The product may be used and tested up to the expiration date on the product label and incubated for the recommended incubation times as stated below.

Refer to the document "[Storage](#)" for more information.

PRECAUTIONS

This product may contain components of animal origin. Certified knowledge of the origin and/or sanitary state of the animals does not guarantee the absence of transmissible pathogenic agents. Therefore, it is recommended that these products be treated as potentially infectious, and handle observing the usual universal blood precautions. Do not ingest, inhale, or allow to come into contact with skin.

This product is for laboratory use only. It is to be used only by adequately trained and qualified laboratory personnel. Observe approved biohazard precautions and aseptic techniques. All laboratory specimens should be considered infectious and handled according to "standard precautions." Refer to the document "[Guidelines for Isolation Precautions](#)" from the Centers for Disease Control and Prevention.

For additional information regarding specific precautions for the prevention of the transmission of all infectious agents from laboratory instruments and materials, and for recommendations for the management of exposure to infectious disease, refer to CLSI document M29: *Protection of Laboratory Workers from Occupationally Acquired Infections*.

Sterilize all biohazard waste before disposal.

Refer to the document "[Precautions When Using Media](#)" for more information.

METHOD OF PREPARATION FOR DEHYDRATED CULTURE MEDIA

1. Suspend 48.0gm of the dehydrated culture media in 1 liter of distilled or deionized water containing 20ml of ethanol (95%, not denatured).

2. Heat to boiling and mix to dissolve completely. **Do not autoclave.**

PROCEDURE AND INTERPRETATION OF RESULTS

For information on procedures and interpretation of results, consult listed references.

LIMITATIONS

It is recommended that biochemical, immunological, molecular, or mass spectrometry testing be performed on colonies from pure culture for complete identification.

Some formulations may require a settling period before pH testing of the prepared medium. If the pH is tested immediately after preparation and is out of specification, retest the medium after 24 hours to obtain final pH results. Always take pH reading at room temperature.

Refer to the document "[Limitations of Procedures and Warranty](#)" for more information.

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as autoclaves, incinerators, and incubators, etc., are not provided.

QUALITY CONTROL

Hardy Diagnostics tests each lot of commercially manufactured media using appropriate quality control microorganisms and quality specifications as outlined on the Certificate of Analysis (CofA) and the CLSI document M22-A3 *Quality Assurance for Commercially Prepared Microbiological Culture Media*. The following microorganisms are routinely used for testing at Hardy Diagnostics:

Test Organisms	Inoculation Method*	Incubation			Results
		Time	Temperature	Atmosphere	
<i>Escherichia coli</i> ATCC® 25922	A	24hr	35°C	Aerobic	Growth
<i>Salmonella enterica</i> ATCC® 14028	A	24hr	35°C	Aerobic	Growth; colorless
<i>Staphylococcus aureus</i> ATCC® 25923	B	24hr	35°C	Aerobic	Inhibited

* Refer to the document "[Inoculation Procedures for Media QC](#)" for more information.

USER QUALITY CONTROL

Users of dehydrated culture media should perform QC testing in accordance with applicable government regulatory agencies, and in compliance with accreditation requirements. Hardy Diagnostics recommends end users check for signs of contamination and deterioration and, if dictated by laboratory quality control procedures or regulation, perform quality control testing to demonstrate growth or a positive reaction and to demonstrate inhibition or a negative reaction, if applicable. Hardy Diagnostics quality control testing is documented on the certificate of analysis (CofA) available from Hardy Diagnostics [Certificate of Analysis](#) website. In addition, refer to the following document "[Finished Product Quality Control Procedures](#)," for more information on QC or see the reference(s) for more specific information.

PHYSICAL APPEARANCE

CRITERION™ m Endo Broth powder should appear homogeneous, free-flowing, and pinkish-purple in color. The prepared media should appear opalescent with precipitate, and pale pink in color.

REFERENCES

1. Fifield, C. W. and C.P. Schaufus. 1958. Improved membrane filter medium for the detection of coliform organisms. *J. Amer. Water Works Assoc.*; 50:193.
2. Eaton, A.D., L.S. Clesceri and A.E. Greenberg (ed.). 1995. *Standard Methods for the Examination of Water and Wastewater*, 19th ed. American Public Health Association, Washington, D.C.
3. Cowman, S. and R. Kelsey. Bottled water, p. 1031-1036. In C. Canderzant and D.F. Splittstoesser (ed.). 1992. *Compendium of Methods for the Microbiological Examination of Foods*, 3rd ed. American Public Health Association, Washington, D.C.
4. Bordner, R. and J. Winter (ed.). 1978. Microbiological methods for monitoring the environment, water and wastes. EPA-600/8-78-017. *Environmental Monitoring and Support Laboratory, Office of Research and Development, U.S. Environmental Protection Agency*, Cincinnati, OH.
5. Environmental Protection Agency. 1992. Manual for the certification of laboratories analyzing drinking water. EPA-814B-92-002. *Office of Ground Water and Technical Support Division, U.S. Environmental Protection Agency*, Cincinnati, OH.

ATCC is a registered trademark of the American Type Culture Collection.

IFU-10300[A]



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[Ordering Information](#)

Distribution Centers:

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