

# Instructions for Use

## CRITERION™ DEXTROSE TRYPTONE BROTH

<a href="#">Cat. no. C5630</a>	CRITERION™ Dextrose Tryptone Broth	60gm
<a href="#">Cat. no. C5631</a>	CRITERION™ Dextrose Tryptone Broth	500gm
<a href="#">Cat. no. C5632</a>	CRITERION™ Dextrose Tryptone Broth	2kg
<a href="#">Cat. no. C5633</a>	CRITERION™ Dextrose Tryptone Broth	10kg
<a href="#">Cat. no. C5634</a>	CRITERION™ Dextrose Tryptone Broth	50kg

### INTENDED USE

Hardy Diagnostics CRITERION™ Dextrose Tryptone Broth is recommended for the cultivation of thermophilic "flat sour" microorganisms related to the spoilage of food.

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

The National Canners Association, in the 1930's, suggested use of Dextrose Tryptone Agar for isolation and growth of "flat-sour" organisms from food products. A modification of the agar based formula allows for a broth enrichment and color change to indicate these spoilage causing organisms. "Flat-sour" spoilage of canned foods is caused by *Bacillus coagulans*. Growth of these bacteria results in a 0.3 to 0.5 decrease in pH which increases acidity, while the ends of the can remain flat, or unchanged in their pH.<sup>(1)</sup>

*B. coagulans* is a bacterium often found in soil, that may appear in canned tomato and dairy products. When conditions within the can are favorable, multiplication of the organism can result in spoilage of the product. Other food spoilage bacteria may be isolated with Dextrose Typtone Broth such as: mesophilic aerobic spore-formers in the genera *Bacillus* and *Sporolactobacillus* and thermophilic "flat-sour" spore-formers such as *Geobacillus stearothermophilus*.<sup>(2)</sup>

Hardy Diagnostics CRITERION™ Dextrose Tryptone Broth formula includes casein peptone (tryptone) as the source of carbon, nitrogen, and vitamins. Dextrose is added as the source of carbohydrates, and bromcresol purple as a pH indicator. This formula has been modified from the original as suggested by the American Public Health Association; the agar was removed, and the concentrations of the remaining ingredients (tryptone and dextrose) were doubled. The broth version has been recommended for canned foods of low to medium acidity (pH 4.5 and higher).<sup>(2)</sup>

### FORMULA\*

Gram weight per liter:	30.0gm/L
Tryptone	20.0gm

Dextrose	10.0gm
Bromcresol Purple	0.04gm

Final pH 6.7 +/- 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 light greenish-beige.

Store the prepared culture media at 2-8°C.

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 30.0gm of the dehydrated culture media in 1 liter of distilled or deionized water. Stir to mix thoroughly.
2. Heat as necessary to dissolve completely.
3. Sterilize in the autoclave at 121°C. for 15 minutes.

## 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>Geobacillus stearothermophilus</i> ATCC® 12980	A	36-48hr	55°C	Aerobic	Growth; color change from purple to yellow

\* 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™ Dextrose Typtone Broth powder should appear homogeneous, free-flowing, and light greenish-beige in color. The prepared media should appear clear, and purple in color.

## REFERENCES

1. National Canners Association. 1933. Bacterial standards for sugar.
2. Vanderzant, C. and D.F. Splittstoesser, (ed.). 1992. *Compendium of Methods for the Microbiological Examination of Foods*, 3rd ed. American Public Health Association, Washington, D.C.
3. American Public Health Association. *Standard Methods for the Examination of Dairy Products*, APHA, Washington, D.C.
4. APHA Technical Committee on Microbiological Methods for Foods. *Compendium of Methods for the Microbiological Examination of Foods*, APHA, Washington, D.C.

5. U.S. Food and Drug Administration. *Bacteriological Analytical Manual*. AOAC, Arlington, VA.  
<http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006949.htm>.

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

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[Ordering Information](#)

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