

Instructions for Use

CRITERION™ TERGITOL 7 AGAR

Cat. no. C7050	CRITERION™ Tergitol 7 Agar	66gm
Cat. no. C7051	CRITERION™ Tergitol 7 Agar	500gm
Cat. no. C7052	CRITERION™ Tergitol 7 Agar	2kg
Cat. no. C7053	CRITERION™ Tergitol 7 Agar	10kg
Cat. no. C7054	CRITERION™ Tergitol 7 Agar	50kg

INTENDED USE

Hardy Diagnostics CRITERION™ Tergitol 7 Agar is used for enumerating and differentiating coliform bacteria.

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

Tergitol 7 (sodium heptadecyl sulfate) Agar, or frequently referred to as T7 Agar, is selective for *Escherichia coli* and members of the coliform group. This medium inhibits the growth of gram-positive microorganisms and spore-forming gram-negative microorganisms, as well as the swarming of *Proteus* spp., while allowing for superior recovery of coliforms.⁽⁴⁾ According to the formula published by Chapman, the addition of Tergitol 7 to an agar medium consisting of proteose peptone No. 3, yeast extract, lactose, and bromothymol blue permitted unrestricted development of all coliform bacteria and inhibited development of gram-negative spore-formers as well as gram-positive microorganisms. He found the difference between *Escherichia coli* and other coliforms to be distinct on this medium since *E. coli* produces yellow colonies with yellow halos while other coliforms produce dark red colonies. Bromothymol blue is incorporated as a pH indicator. Counts of coliform organisms on Tergitol 7 Agar plates were found to be as much as 30% higher than on some other selective media.⁽⁹⁾

Chapman modified his original formula by adding 40.0mg of triphenyltetrazolium chloride (TTC) per liter.⁽⁵⁾ This medium was found to be helpful in recognizing and identifying *Escherichia coli*. Confirmation of the presence of *E. coli* was possible after as little as 10 hours incubation at 35 degrees C. Chapman also reported that Tergitol 7 Agar with added TTC gave a selective medium suitable for the isolation of *Candida* and other fungi.⁽⁵⁾

Tergitol 7 Agar with TTC was shown to be useful in routine water analysis and the examination of foods.^(6,7) The medium conforms with the recommendations of the APHA.⁽⁸⁾

FORMULA

Gram weight per liter:	33.0gm/L
Lactose	10.0gm

Proteose Peptone No. 3	5.0gm
Yeast Extract	3.0gm
Tergitol 7	0.1gm
Bromothymol Blue	0.025gm
Agar	15.0gm

Final pH 6.9 +/- 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 beige.

Store the prepared culture media at 2-30°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 33.0gm of the dehydrated culture media in 1 liter of distilled or deionized water.
2. Heat to boiling and mix to dissolve completely.
3. Autoclave at 121°C. for 15 minutes.
4. If desired, cool Tergitol 7 Agar to 50°C. Add 4ml of either TTC Solution 1% or a filter-sterilized 1% solution of

TTC.

PROCEDURE AND INTERPRETATION OF RESULTS

For information on procedures and interpretation of results, consult listed references or refer to the prepared media Instructions for Use (IFU) for Cat. No. G58.

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	18-48hr	35°C	Aerobic	Growth; yellow colonies
<i>Enterobacter aerogenes</i> ATCC® 13048	A	18-48hr	35°C	Aerobic	Growth; yellow colonies
<i>Enterococcus faecalis</i> ATCC® 29212	B	18-48hr	35°C	Aerobic	Inhibited; no color change

* 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™ Tergitol 7 Agar powder should appear homogeneous, free-flowing, and beige in color. The prepared

media without TTC should appear slightly opalescent, without precipitate, and green in color.

REFERENCES

1. Jorgensen., et al. *Manual of Clinical Microbiology*, American Society for Microbiology, Washington, D.C.
2. Tille, P., et al. *Bailey and Scott's Diagnostic Microbiology*, C.V. Mosby Company, St. Louis, MO.
3. Isenberg, H.D. *Clinical Microbiology Procedures Handbook*, Vol. I, II & III. American Society for Microbiology, Washington, D.C.
4. Chapman, G.H. 1947. A superior culture medium for the enumeration and differentiation of coliforms. *J. Bacteriol.*; 53:504.
5. Chapman, G.H. 1951. A culture medium for detecting and confirming *Escherichia coli* in ten hours. *Am. J. Public Health*; 41:1381.
6. Kulp, W., et al. 1953. Use of Tergitol 7 Triphenyl Tetrazolium Chloride Agar as the coliform confirmatory medium in routine sanitary water analysis. *Am. J. Public Health*; 43:1111.
7. Mossel, D.A.A. 1962. An ecological investigation on the usefulness of two specific modifications of Eijkman's test as an element of the methods for the detecting of faecal contamination of foods. *J. Appl. Bacteriol.*; 25:20.
8. Speck, Marvin L. 1992. *Compendium of Methods for the Microbiological Examination of Foods*, 3rd ed. American Public Health Association, Washington, D.C.
9. MacFaddin, J.F. 1985. *Media for Isolation, Cultivation, Identification, Maintenance of Bacteria*, Vol. I. Williams & Wilkins, Baltimore, MD.

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

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