



## PRODUCT SPECIFICATION SHEET

### Lethen Agar (DM711)

#### Intended Use

Lethen Agar (DM711) is recommended for evaluating the bactericidal activity of quaternary ammonium compounds, and is used with Lethen Broth to determine the suitability of preservatives for use in cosmetics and other materials.

#### Product Summary and Explanation

Weber and Black<sup>(1)</sup> described the value of a highly nutritional solid medium containing neutralizing agents for quaternary ammonium compounds in sanitizers. The addition of lecithin and polysorbate 80 (Tween 80) to Tryptone Glucose Extract (TGE) agar as suggested by Weber and Black effectively neutralizes quaternary ammonium compounds in the testing of germicidal activity. Thus, addition of a combination of lecithin and tween 80 ("Lethen") to TGE agar resulted in a modified medium Lethen Agar.

Lethen Agar and Lethen Broth are specified for use by the American Society for Testing and Materials (ASTM) in the Standard Test Method for Preservatives in Water-Containing Cosmetics.<sup>(2)</sup>

#### Principles of the Procedure

Lethen Agar contains beef extract, casein enzymic hydrolysate which provides the carbon and nitrogen sources required for the microbial growth. Dextrose is provided as a source of fermentable carbohydrate. Lecithin and polysorbate 80 enables the recovery of bacteria from solutions containing residues of disinfectant used in sanitization of utensils and equipments. Lecithin is added to neutralize quaternary ammonium compounds and polysorbate 80 is incorporated to neutralize phenols, hexachlorophene, formalin and, with lecithin, ethanol.<sup>(3,4)</sup>

#### Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	5.00
Beef extract	3.00
Dextrose	1.00
Polysorbate 80	7.00
Lecithin	1.00
Agar	15.00
Final pH: 7.0 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

#### Precautions

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

#### Directions

1. Suspend 32 grams of the medium in one liter of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Autoclave at 15 lbs pressure (121°C) for 15 minutes.
4. Mix well and dispense as desired.





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### Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light yellow coloured clear to slightly opalescent gel forms in Petri plates
Reaction of 3.2% Solution	pH : 7.0 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

**Expected Cultural Response:** Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Recovery
1.	<i>Escherichia coli ATCC 25922</i>	50 -100	good-luxuriant	≥70%
2.	<i>Staphylococcus aureus ATCC 6538</i>	50 -100	good-luxuriant	≥70%

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

### Test Procedure

Refer to appropriate references for standard test procedures.

### Results

Refer to appropriate references and test procedures for interpretation of results.

### Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

### Expiration

Refer to the 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.

### Limitations of the Procedure

1. The dehydrated Letheen Agar has a characteristic "brown sugar" appearance and may seem moist. This does not indicate deterioration.<sup>(4)</sup>
2. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
3. Consult appropriate texts for detailed information and recommended procedures.

### Packaging

Product Name : Letheen Agar

Product Code : DM711

Available Pack sizes : 500gm





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### References

1. Weber and Black, 1948, Soap Sanitary Chem., 24:134.
2. American Society for Testing and Materials, 1991, Standard Test Methods for preservatives in water-containing cosmetics, E640-78. Annual Book of ASTM Standards, ASTM, Philadelphia, Pa.
3. Favero (Chm.), 1967, A State of the Art Report, Biological Contamination Control Committee, American Association for Contamination Control.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

### Further Information

For further information please contact your local MICROMASTER Representative.



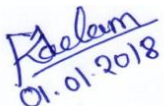
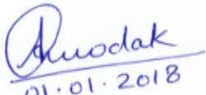

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