



# PRODUCT SPECIFICATION SHEET

## Phenylethyl Alcohol Agar Base (DM1837)

### Intended Use

Phenylethyl Alcohol Agar Base (DM1837) is recommended for selective isolation of gram-positive organisms like *Staphylococci* and *Streptococci*.

### Product Summary and Explanation

Phenylethyl alcohol is a chemical agent that exhibits inhibitory action against gram-negative and certain gram-positive bacteria. Lilley and Brewer incorporated the chemical in an infusion agar base as a selective agent for the isolation of gram-positive bacteria.<sup>(1,2)</sup> Phenylethyl Alcohol Agar, unsupplemented or supplemented with 5% sheep blood, is used in the microbiology laboratory to inhibit gram-negative bacteria, particularly *Proteus*, in specimens containing a mixed bacterial flora. Phenylethanol Agar inhibits swarming of *Proteus* spp., and can be used to selectively isolate anaerobic bacteria from clinical specimens with mixed flora. Phenylethanol Agar is specified for use in several reference methods.<sup>(3,4)</sup> It is also useful in the diagnostic studies of wounds and exudate cultures.<sup>(5)</sup> However, Phenylethyl Alcohol Agar can't be used to study haemolytic reactions as the results are atypical.

### Principles of the Procedure

Phenylethyl Alcohol Agar Base contains casein enzymic hydrolysate and papaic digest of soyabean meal which provides nitrogen, carbon, sulfur and trace elements required for the growth of organisms. Addition of sheep blood provides many growth factors. Sodium chloride helps to maintain the osmotic equilibrium. Addition of phenylethanol to a nutritive medium permits the growth of gram-positive organisms but inhibits the gram-negative organisms found in the same specimen.<sup>(2)</sup> Phenylethyl alcohol exerts inhibitory bacteriostatic action on gram-negative bacteria by inhibiting their DNA synthesis.<sup>(6)</sup>

### Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	15.00
Papaic digest of soyabean meal	5.00
Sodium chloride	5.00
Phenylethyl alcohol	2.50
Agar	15.00
Final pH: 7.3 ± 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 42.5 grams of the medium in one liter of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. For the preparation of blood agar add 5% v/v sterile defibrinated blood to the sterile molten medium cooled to 45°C. Mix well before pouring into sterile plates.

### Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Basal medium: Light amber coloured clear to slightly opalescent gel After addition of 5%v/v sterile defibrinated blood : Cherry red coloured opaque gel





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	forms in Petri plates
<b>Reaction of 4.25% solution</b>	pH 7.3 ± 0.2 at 25°C
<b>Gel Strength</b>	Firm, comparable with 1.5% Agar gel

**Expected Cultural Response:** Cultural characteristics observed with added 5% v/v sterile defibrinated blood, after an incubation at 35-37°C for 18-48 hours.

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Recovery	Colour of colony
1.	<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-luxuriant	≥50%	white to gray or cream to yellow
2.	<i>Enterococcus faecalis</i> ATCC 29212	50-100	good-luxuriant	≥50%	blue-gray
3.	<i>Salmonella Typhi</i> ATCC 6539	50-100	fair-good	20-30%	--
4.	<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	<=10%	--
5.	<i>Proteus mirabilis</i> ATCC 25933	50-100	none-poor	<=10%	--

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

### Test Procedure

Refer to appropriate references for standard test procedures. Incubate plates 24-48 hours at 35 ± 2°C in an aerobic atmosphere supplemented with carbon dioxide.

### Results

Examine medium for growth and hemolytic reactions after 18-24 and 48 hours incubation. Perform additional biochemical testing to identify the organism. Refer to appropriate references and standard 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. Some strains may be encountered that grow poorly or fail to grow on this medium. *Pseudomonas aeruginosa* is not completely on this medium.
2. Some gram-positive cocci may be slightly inhibited and many require further incubation (up to 48 hours) for sufficient growth to be evident.
3. Consult appropriate texts for detailed information and recommended procedures.

### Packaging

Product Name : Phenylethyl Alcohol Agar Base

Product Code : DM1837

Available Pack sizes : 100gm





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## References

1. Brewer, J. H., and B. D. Lilley. 1949. Paper presented at the December meeting of the Maryland Association of Medical and Public Health Laboratories.
2. Lilley, B. D., and J. H. Brewer. 1953. The selective antibacterial action of phenylethylalcohol. J. Pharm. Assoc. 42:6.
3. Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Tenover (eds.). Manual of clinical microbiology, 6<sup>th</sup> ed. American Society of Microbiology, Washington, D.C.
4. Isenberg, H. D. 1992. Clinical microbiology procedures handbook, American Society for Microbiology, Washington, D.C.
5. Holzman J. A., 1958, Am. J. Med. Technol., 24 (5) : 327,342.
6. Dowell, Hill and Altemeier, 1964, J. Bacteriol., 88:1811.

## Further Information

For further information please contact your local MICROMASTER Representative.



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DM1837PSS,QAD/FR/024,Rev.00/01.01.2018

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