

# PRODUCT SPECIFICATION SHEET



## Sheep Blood Agar Base (DM1419)

### Intended Use

Sheep Blood Agar Base (DM1419) with addition of sheep blood, gives improved haemolytic reactions of organisms.

### Product Summary and Explanation

Haemolysins are exotoxins produced by bacteria that lyse red blood cells. The haemolytic reaction can be visualized on blood agar plates. Colonies of haemolytic bacteria on blood agar plates may be surrounded by clear, colourless zone where the red blood cells have been lysed and the haemoglobin destroyed to a colourless compound. This is beta haemolysis. Other types of bacteria can reduce haemoglobin to methaemoglobin which produces a greenish zone around the colonies and is called alpha haemolysis.<sup>(1)</sup> Gamma haemolysis is no haemolysis where no change in the medium is observed.<sup>(2)</sup> Sheep Blood Agar Base is based on the formulation of Blood Agar Base No.2 (DM041), which is supplemented with sheep blood and is used to study haemolytic reactions (patterns) of organisms. But this gave mixed haemolytic (alpha and beta haemolysis) for some Group A *Streptococci* (*Streptococcus pyogenes*). These mixed haemolytic reactions were due to trace amounts of fermentable carbohydrates in yeast extract and the physiological differences of sheep blood when compared to horse blood.<sup>(3)</sup>

Sheep Blood Agar Base with added sheep blood was developed to allow maximum recovery of organisms without interfering with their haemolytic reactions. Sheep Blood Agar Base was formulated to be compatible with sheep blood and give improved haemolytic reactions of organisms. Comparisons with other blood agar bases supplemented with sheep blood have shown that with Sheep Blood Agar Base the growth of many bacteria - especially the fastidious *streptococci* - is considerably improved, and the expected beta haemolytic reaction is achieved with *Streptococcus pyogenes*.

### Principles of the Procedure

Sheep Blood Agar Base contains casein enzymic hydrolysate and yeast extract provide nitrogen, carbon, amino acids and vitamins. Peptic digest of animal tissue is the nitrogen source. Sodium chloride helps to maintain the osmotic balance.

### Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	14.00
Peptic digest of animal tissue	4.50
Yeast extract	4.50
Sodium chloride	5.00
Agar	12.50
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 40.5 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. Cool to 45-50°C and aseptically add 7% sterile sheep blood.
5. Mix well and pour into sterile Petri plates.

### Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Basal medium yields light yellow coloured clear gel without any precipitate. On addition of 7% sheep blood, cherry red coloured opaque gel forms in Petri plates
Reaction of 4.05% Solution	pH : 7.3 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.25% Agar gel



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**Expected Cultural Response** : Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours with added 7% v/v sterile sheep blood.

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Recovery	Haemolysis
1.	<i>Streptococcus pneumoniae</i> ATCC 6303	50-100	good-luxuriant	>=70%	alpha
2.	<i>Streptococcus pyogenes</i> ATCC 19615	50-100	good-luxuriant	>=70%	beta

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

## Test Procedure

Refer appropriate references for specific test procedures.

## Results

Refer 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. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

## Packaging

**Product Name** : Sheep Blood Agar Base

**Product Code** : DM1419

**Available Pack sizes** : 500gm

## References

1. Pelczar M. J. Jr., Reid R. D., Chan E. C. S., 1977, Microbiology, 4th Ed., Tata McGraw-Hill Publishing Company Ltd, New Delhi.
2. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed., J. B. Lippincott Company.
3. Spector W. S., (Ed.), 1961, Handbook of Biological Data, W. B. Saunder Company, Philadelphia and London.

## Further Information

For further information please contact your local MICROMASTER Representative.



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