

## Technical Information

### Sulphate Reducing Medium (Triple Pack)

**Product Code: DM 1803**

**Application:** - Sulphate Reducing Medium is recommended for enumeration of sulphate reducing bacteria in water samples.

### Composition\*\*

Ingredients	Gms / Litre
Part A	-
Dipotassium phosphate	0.500
Peptic digest of animal tissue	2.000
Beef extract	1.000
Sodium sulphate	1.500
Magnesium sulphate heptahydrate	2.000
Calcium chloride	0.100
Part B	-
Ferric ammonium sulphate	0.392
Sodium ascorbate	0.100
Part C	-
Sodium lactate	3.500
Final pH (at 25°C)	7.5±0.3

\*\*Formula adjusted, standardized to suit performance

### Principle & Interpretation

Sulphate Reducing Medium is devised according to APHA <sup>(1)</sup> for enumeration of sulphate reducing bacteria. Sulphate reducing bacteria such as *Desulfovibrio* converts sulphate to sulphide which reacts with ferrous ions to give a black colour within 4 to 21 days at 20 - 30°C. *Thiobacillus* also produces sulphuric acid and hence is found in environment containing H<sub>2</sub>S <sup>(2)</sup>.

Peptic digest of animal tissue and beef extract in the medium provide nitrogen and other nutrients necessary to support bacterial growth. Potassium phosphates buffer the medium. Sodium chloride and the sulphate salts provide essential ions.

The tubes are filled completely to create anaerobic conditions. When sample volume is greater than 10 ml, sample is passed through a 0.45 µm membrane filter and the filter is transferred to screw-capped test tubes containing medium.

### Methodology

Suspend 7.1 grams of Part A powder media in 900 ml distilled water. Shake well & sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. On the day of use prepare solution of Part B by suspending 0.492 grams of Part B powder media in 100 ml distilled water. Shake well & sterilize by filtration through a 0.45 µm membrane filter and aseptically add this 100 ml solution to 900 ml Part A medium. Then separately sterilize the 3.50 grams Part C medium by autoclaving at 15 lbs pressure (121°C) for 15 minutes and aseptically add to the mixture of Part A and B. Mix well and aseptically transfer the complete medium to sterile screw capped tubes filling them completely.

## Quality Control

### Physical Appearance

Part A : Cream to yellow homogeneous free flowing powder Part B : White to cream homogeneous free flowing powder Part C : Colourless solution

### Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent solution in tubes

### Reaction

Reaction of 0.71% w/v Part A + 0.05% w/v Part B + 0.35% v/v Part C aqueous solution at 25°C. pH : 7.5±0.3

### pH range

7.20-7.80

### Cultural Response/Characteristics

DM 1803: Cultural characteristics observed after an incubation at 20-30°C for upto 4-21 days .

### Organism

*Desulfovibrio desulfuricans* ATCC 13541

*Thiobacillus thiooxidans* ATCC 19377

### Growth

luxuriant

good-luxuriant

## Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

**Prepared Media:** 2-8° in sealable plastic bags for 2-5 days.

## Further Reading

1. Eaton A. D., Clesceri L. S. and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
2. Starkey R.L. 1937, J. Bacteriol., 33:545

## Disclaimer :

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