

Technical Information

Sulphate API Agar w/o Sodium Lactate

Product Code: DM 1309

Application: Sulphate API Agar is used for detection and estimation of sulphate reducing bacteria.

Composition**

Ingredients	Gms / Litre
Yeast extract	1.000
Magnesium sulphate	0.200
Dipotassium phosphate	0.010
Ferrous ammonium sulphate	0.100
Sodium chloride	10.000
Agar	14.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Sulphate API Agar w/o Sodium Lactate is prepared as per the formulation described in the 'American Petroleum Institute Recommended Practice' ⁽¹⁾ for detection of sulphate reducing bacteria. Sulphate-reducing bacteria are responsible for corrosion of oil well systems resulting in perforations in the pipes. Sulphate-reducing bacteria convert sulphate to sulphide which with the ferrous ion gives black colour. The insoluble sulphide results in plugging.

Yeast extract in the medium provides nitrogen and other nutrients necessary to support bacterial growth. Ascorbic acid is the carbohydrate source. Dipotassium Phosphate buffers the medium. Sodium chloride, magnesium sulphate and ferrous ammonium sulphate provide essential ions. *Desulfovibrio* oxidizes reduced substrates i.e. sodium lactate, further with stepwise reduction of sulfate to sulfide. The detection and estimation of these bacteria is done on the basis of their ability to grow and produce sulphide in this medium. For the estimation, appropriate dilutions of water samples are inoculated in the test.

Methodology

Suspend 25.41 grams of powder media in 1000 ml distilled water. Add 4 ml of sodium lactate. Shake well & heat to dissolve the medium completely. Dispense preferably in screw-capped tubes in 9 ml amounts. Sterilize by autoclaving at 15 lbs pressure (121°C) for 10 minutes. Close the caps immediately while the medium is still hot.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.4% Agar gel.

Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent gel forms in Petri plates



Dehydrated Culture Media
Bases / Media Supplements

Reaction

Reaction of 2.54% w/v aqueous solution (containing 0.4% v/v sodium lactate) at 25°C. pH : 7.4±0.2

pH range 7.20-7.60

Cultural Response/Characteristics

DM1309: Cultural characteristics observed after an incubation at 30°C for upto 1 week, under anaerobic condition.

Organism	Inoculum (CFU)	Growth
<i>Desulfovibrio desulfuricans</i> ATCC 13541	50-100	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: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. American Petroleum Institute Recommended Practice 28, 1959, First ed.

Disclaimer :

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