



# Technical Data

## SDS Agar (Sodium Dodecyl Sulphate Polymyxin Sucrose Agar) M1155

SDS Agar is used for enrichment, isolation and enumeration of *Vibrio vulnificus* from seafood samples as per APHA.

### Composition\*\*

| Ingredients             | Gms / Litre |
|-------------------------|-------------|
| Proteose peptone        | 10.000      |
| Beef extract            | 5.000       |
| Sucrose                 | 15.000      |
| Sodium chloride         | 20.000      |
| Sodium dodecyl sulphate | 1.000       |
| Bromothymol blue        | 0.040       |
| Cresol red              | 0.040       |
| Agar                    | 15.000      |
| Final pH ( at 25°C)     | 7.6±0.2     |

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 33.04 grams in 500 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45 to 50°C and aseptically add rehydrated contents of 1 vial of Polymyxin B Selective Supplement (FD003). Mix well and pour into sterile Petri plates.

### Principle And Interpretation

*Vibrio vulnificus* is a gram-negative, motile, curved, rod-shaped bacterium. Present in marine environments such as estuaries, brackish ponds, or coastal areas, *V. vulnificus* is closely related to *V. cholerae*, the causative agent of cholera (1, 2). *V. vulnificus* causes an infection often incurred after eating seafood, especially oysters. The bacteria can also enter the body through open wounds when swimming or wading in infected waters (2). SDS Agar is formulated as described by Bryant et al (3) for differentiation of *V. vulnificus* from other *Vibrio*. SDS Agar is recommended by APHA (4) for isolation and enumeration of *V. vulnificus* from sea foods. *V. vulnificus* is a causative agent of septicemic shock associated with consumption of raw oysters (4). *V. vulnificus* forms distinctive colonies which are round, opaque, blue to brownish, about 2 to 3 mm in diameter with a blue opaque halo around each colony.

The medium contains proteose peptone and beef extract which provide necessary growth nutrients like nitrogenous and carbonaceous compounds. Sucrose is a fermentable sugar.

Addition of 2% sodium chloride to the medium provides necessary salinity for the growth of *Vibrio*. Bromothymol blue and cresol red act as pH indicators. Sodium dodecyl sulphate and polymyxin B sulphate are the selective agents.

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of Prepared Medium

Reddish purple coloured clear to slightly opalescent gel forms in Petri plates

#### Reaction

Reaction of 6.6% w/v aqueous solution at 25°C. pH : 7.6±0.2

#### pH

7.40-7.80

#### Cultural Response

M1155: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

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| Organism                            | Inoculum (CFU) | Growth    | Recovery | Colour of colony |
|-------------------------------------|----------------|-----------|----------|------------------|
| <b>Cultural Response</b>            |                |           |          |                  |
| <i>Vibrio cholerae</i> ATCC 15748   | 50-100         | luxuriant | >=50%    | yellow           |
| <i>Vibrio vulnificus</i> ATCC 29306 | 50-100         | luxuriant | >=50%    | blue             |

### Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

### Reference

1. Oliver J. D., Kaper J., 2001, *Vibrio* species. pp. 263-300 In: Food Microbiology: Fundamentals and Frontiers, (Doyle M. P. et al, Editors), 2nd Ed., ASM Press. 1555811175.
2. Oliver J. D., 2005, "Wound infections caused by *Vibrio vulnificus* and other marine bacteria", *Epidemiol. Infect.* 133 (3): 383-91.
3. Bryant R. G., Jarvis J. and Janda J. M., 1987, *Appl. Environ. Microbiol.* 53:1556.
4. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, *Compendium of Methods for the Microbiological Examination of Foods*, 3rd Ed., APHA, Washington, D.C.

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