



PRODUCT SPECIFICATION SHEET

Crystal Violet Lactose Broth (DM066)

Intended Use

Crystal Violet Lactose Broth (DM066) for detection of coliforms in water filtration control works.

Product Summary and Explanation

Coliforms are commonly used bacterial indicator of sanitary quality of foods and water. They are defined as rod-shaped Gram-negative, non-spore forming bacteria which can ferment lactose with the production of acid and gas when incubated at 35-37°C.⁽¹⁾ Coliforms can be found in the aquatic environment, in soil and on vegetation; they are universally present in large numbers in the feces of warm-blooded animals. The extent to which total coliforms are present in the source water can indicate the general quality of that water and the likelihood that the water is faecally contaminated. Coliforms present above the standard indicates inefficacy in treatment or in the distribution system, due to this the total coliforms are currently controlled in drinking water regulations (i.e. Total Coliform Rule). Environmental Protection Agency (EPA) requires all public water systems to monitor for total coliforms in distribution systems. If coliforms are found, then the public water system must further analyze coliform-positive sample for specific types of coliforms (i.e., faecal coliforms or *E. coli*). EPA is increasing protection from pathogens in surface water systems as part of the Interim Enhanced Surface Water Treatment Rule.⁽²⁾ Crystal Violet Lactose Broth is used for the detection of coliforms in such water filtration control works.

Principles of the Procedure

Crystal Violet Lactose Broth contains proteose peptone, beef extract and peptic digest of animal tissue as sources of carbon, nitrogen, vitamins, minerals and essential growth nutrients. Dipotassium and mono potassium phosphates provide act as buffering agents. Lactose is the carbon and energy source. Crystal violet inhibits most of the gram positive organisms.

Formula / Liter

| Ingredients | Gms / Liter |
|--|-------------|
| Peptic digest of animal tissue | 5.00 |
| Lactose | 5.00 |
| Dipotassium phosphate | 5.00 |
| Monopotassium phosphate | 1.00 |
| Crystal violet | 0.00143 |
| Final pH: 7.4 ± 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 16 grams of medium in one liter of distilled water.
2. Distribute in 10 ml quantities in tubes with inverted Durhams tubes.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. If the inoculum is more than 1 ml double or multiple strength media must be used.





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Quality Control Specifications

| | |
|---------------------------|---|
| Dehydrated Appearance | Light yellow to light tan homogeneous free flowing powder |
| Prepared Medium | Light purple coloured, clear solution in tubes |
| Reaction of 1.6% solution | pH 7.4 \pm 0.2 at 25°C |
| Gel Strength | Not Applicable |

Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 40-48 hours.

| Sr. No. | Organisms | Results to be achieved | | |
|---------|--|------------------------|----------------|-----------------------------|
| | | Inoculum (CFU) | Recovery | Colour of Medium |
| 1. | <i>Escherichia coli</i> ATCC 25922 | 50-100 | good-luxuriant | purple |
| 2. | <i>Staphylococcus aureus</i> ATCC 25923 | 50-100 | fair-good | light yellow |
| 3. | <i>Staphylococcus epidermidis</i> ATCC 12228 | 50-100 | fair-good | purple/very slightly yellow |
| 4. | <i>Streptococcus pyogenes</i> ATCC 19615 | $\geq 10^3$ | inhibited | |

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

Test Procedure

Refer to appropriate references for standard test procedures.

Results

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. 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 : Crystal Violet Lactose Broth

Product Code : DM066

Available Pack sizes : 500gm

References

1. American Public Health Association (APHA), (1995), Standard Methods for the Examination of Water and Wastewater (19th ed.), APHA, Washington, DC.
2. U.S. Environmental Protection Agency (EPA), (2008), Washington, DC.





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Further Information

For further information please contact your local MICROMASTER Representative.



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DM066PSS,QAD/FR/024,Rev.00/01.01.2018

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