Technical Information

Maximum Recovery Diluent

Product Code: DM 2030

Application: - Maximum Recovery Diluent is a protective and isotonic medium used for maximal recovery of microorganisms from a variety of sources.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	1.000
Sodium chloride	8.500
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Maximum Recovery Diluent is a isotonic diluent formulated and recommended by ISO Committee [1] for standard methods of examination of foodstuffs that require sample dilution to estimate the number of microorganisms accurately.

Maximum Recovery Diluent provides protective effect of peptic digest of animal tissue [2] with the osmotic balance of physiological saline [3]. The low concentration of peptic digest of animal tissue helps to maintain the organisms for 1-2 hours of dilution without multiplication. The isotonic property of the diluent ensures the recovery of organisms from various sources, which may be vulnerable in distilled water or aqueous suspensions. Put 10 gm of test sample into a sterile blender jar and add 90 ml of sterile Maximum Recovery Diluent. Operate the blender at 15,000 to 20,000 revolutions per minute. Transfer 1 ml of it to 9 ml of sterile diluent within 15 minutes and mix well to get dilution of 10^{-1} Appropriate serial dilution can be prepared using same diluent and counts obtained by spread plate or pour plate technique. Use a positive test sample divided between new and previous diluent. Carry out duplicate tests as described in technique and look for equivalent yields of organisms between the diluent batches. Incubate the tubes with test organisms. At time zero and after 30 minutes at room temperature, subculture a loopful (0.01 ml) onto Soyabean Casein Digest Agar (DM1290) with 5% v/v sheep blood using streak technique. Incubate plates at 35 ± 2°C for 18-24 hours.

Methodology

Suspend 9.5 grams of powder media in 1000 ml distilled water. Shake well and heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Quality Control

Physical Appearance
White to pale yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light yellow coloured clear solution without any precipitate

Reaction
Reaction of 0.95% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH Range 6.80-7.20

Cultural Response/Characteristics
DM2030: Cultural characteristics observed on Soyabean Casein Digest Agar (DM1290), after an incubation at 35-37°C for 18-24 hours of cultures suspended in Maximum Recovery Diluent for 30 minutes.

Organism	Inoculum (CFU)	Recovery (after 30 minutes)
Escherichia coli ATCC 25922	50-100	No change in numbers
Staphylococcus aureus ATCC 25923	50-100	No change in numbers

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. International Organization for the Standardization (ISO), ISO/DIS 6649.
2. Straker R. P. and Stokes J. L., 1957, Appl. Microbiol., 5:21.
3. Patterson J. W. and Cassells J. A., 1963, J. Appl. Bacteriol., 26:493.

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