

Maximum Recovery Diluent, Granulated

GM1030

Maximum Recovery Diluent, granulated 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

Directions

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

Principle And Interpretation

Maximum Recovery Diluent is formulated as recommended by ISO Committee (1) for use as a isotonic diluent. Standard methods for the examination of foodstuffs require sample dilution to be carried out accurately to estimate the number of microorganisms.

Maximum Recovery Diluent combines 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. It will be 10⁻¹ dilution. Appropriate serial dilutions 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 (M290) with 5% v/v sheep blood using streak technique. Incubate plates at 35 ± 2°C for 18-24 hours.

Quality Control

Appearance

White to pale yellow coloured granular medium

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

6.80-7.20

Cultural Response

Cultural characteristics observed on Soyabean Casein Digest Agar (M290), 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)
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Cultural Response

<i>Escherichia coli</i> ATCC 25922	50-100	no change in numbers
<i>Staphylococcus aureus</i> ATCC 25923	50-100	no change in numbers

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. 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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