Maximum Recovery Diluent

Intended Use
Maximum Recovery Diluent is an isotonic diluent containing a low level of peptone used for maintaining the viability of organisms during dilution procedures.

Summary and Explanation
Standard methods for the microbiological examination of foodstuffs require sample dilution to be carried out accurately to estimate the number of microorganisms. Diluents consisting of sterile saline, phosphate buffer solutions and distilled water have all been shown to have a lethal action on a wide range of organisms.[1,2]

The presence of low levels of peptone in the diluent at a pH of 7.0 ± 0.2 affords protection for bacteria for at least one hour during the dilution stage.[3,4] The presence of peptone also allows accurate quantitative procedures to be performed with minimal reductions in viable count in the diluent.

Principles of Procedure
Low levels of peptone help protect organisms in the diluent. Sodium chloride maintains proper osmotic pressure.

User Quality Control

Identity Specifications
Difco™ Maximum Recovery Diluent

Dehydrated Appearance:	Cream to beige, free-flowing, homogeneous.
Solution:	0.95% solution, soluble in purified water. Solution is colorless, clear.
Prepared Appearance:	Colorless, clear.
Reaction of 0.95% Solution at 25°C:	pH 7.0 ± 0.2

Survival Test
Difco™ Maximum Recovery Diluent

Prepare the medium per label directions. Inoculate tubes with the test organism. At time zero and after 30 minutes at room temperature, subculture a loopful (0.01 mL) onto **Trypticase**™ Soy Agar with 5% Sheep Blood (TSA II) plates using the streak technique. Incubate plates at 35 ± 2°C for 18-24 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY AFTER 30 MINUTES
Escherichia coli	25922	10^3-10^4	No significant reduction
Staphylococcus aureus	25923	10^3-10^4	No significant reduction

Formula
Difco™ Maximum Recovery Diluent

Approximate Formula* Per Liter		
Peptone	1.0	g
Sodium Chloride	8.5	g

**Adjusted and/or supplemented as required to meet performance criteria.*

Directions for Preparation from Dehydrated Product
1. Dissolve 9.5 g of the powder in 1 L of purified water.
2. Dispense into final containers and cap loosely.
3. Autoclave at 121°C for 15 minutes.
4. Test samples of the finished product for performance using stable, typical control cultures.

Procedure
Consult appropriate references for dilution procedures when testing foods.[1-4]

Expected Results
Refer to appropriate references and procedures for results.

References

1. DeMello, Danielson and Kiser. 1951. J. Lab. Clin. Med. *37*:579.
2. Gunter. 1954. J. Bacteriol. *67*:628.
3. Straka and Stokes. 1957. Appl. Microbiol. *5*:21.
4. Patterson and Cassells. 1963. J. Appl. Bacteriol. *26*:493.

Availability
Difco™ Maximum Recovery Diluent

Cat. No. 218971 Dehydrated – 500 g