



## Artificial Sea Water Salts Broth

M1942

### Intended Use:

Recommended for culturing marine bacteria.

### Composition\*\*

Ingredients	Gms / Litre
Sodium chloride	24.600
Potassium chloride	0.670
Calcium chloride, 2H <sub>2</sub> O	1.360
Magnesium sulphate, 7H <sub>2</sub> O	6.290
Magnesium chloride, 6H <sub>2</sub> O	4.660
Sodium bicarbonate	0.180
Final pH ( at 25°C)	7.5±0.5

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

### Directions

Suspend 31.73 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml purified / distilled water. If desired filter through whatmann filter paper. Dispense as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

### Principle And Interpretation

Artificial sea water is primarily used in marine biology and allows the easy preparation of media appropriate for marine organisms. Marine artificial media are used when critical studies cannot be conducted using a natural seawater base, so artificial seawater medium is used to minimize or exclude known contaminants for the purpose of studying trace elements. The Artificial sea water recipe consists of mineral salts, some anhydrous salts that can be weighed out, and some hydrous salts that should be added to the artificial seawater as a solution (3). There are many formulas, each with its own characteristics. The quality of a brand of sea salt is dependent on the formula, the quality of the raw materials and the uniformity of the blending. The salinity is the sum of all of the dissolved ions (4). All the salts present in the medium provides organic source of growth nutrients. *Vibrio* and *Halobacterium* are common survivals, under conditions of hyper osmolarity.

### Type of specimen

Marine water samples

### Specimen Collection and Handling

For marine water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (3).

After use, contaminated materials must be sterilized by autoclaving before discarding.

### Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

### Limitations

1. Some species may show poor growth due to nutritional variations.

### Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

### Appearance

White to cream homogeneous free flowing powder

### Colour and Clarity of prepared medium

Colourless clear solution without any precipitate

### Reaction

Reaction of 3.17% w/v aqueous solution at 25°C. pH : 7.5±0.5

### pH

7.00-8.00

### Cultural Response

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

Organism	Inoculum (CFU)	Growth
<i>Halobacterium salinarum</i> ATCC 33171	50-100	luxuriant
<i>Halococcus morrhuae</i> ATCC 50-100 17082		luxuriant

## Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use.

Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (1,2).

## Reference

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2<sup>nd</sup> Edition.
2. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
3. Kester, D. R., Duedall, I. W., Connors, D. N. and Pytkowicz, R. M. (1967). Preparation of Artificial Seawater. Limnology & Oceanography 12, 176—179.
4. Thomas Frakes, Technical Consultant, Aquarium Systems, Inc.

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### Disclaimer :

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