



## Artificial Sea Water Salts Broth

M1942

An artificial salt mixture closely resembling the composition of ocean water, 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 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(1). 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(2). All the salts present in the medium provides organic source of growth nutrients. *Vibrio* and *Halobacterium* are commom survivals,under conditions of hyper osmolarity.

### 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.

#### Cultural Response

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

### 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. Kester, D. R., Duedall, I. W., Connors, D. N. and Pytkowicz, R. M. (1967). Preparation of Artificial Seawater. *Limnology & Oceanography* 12, 176—179.
2. Thomas Frakes, Technical Consultant, Aquarium Systems, Inc.

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