

## Protocol for the production of artificial Seawater from commercially available Salt Mixtures

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### 1 PREPARATION

- (1) Measure the salinity in the natural seawater, which has to be sampled/filtered
- (2) Define the desired volume of artificial seawater (in partial volumes of 5 liters)
- (3) Calculate the amount of sea salt to obtain the measured salinity under step (1) for the volume defined in step (2) using this equation :

$SAL_{nat}$  (‰) : salinity of the natural seawater, which has to be sampled/filtered

$CONC_{nat}$  (gr/l) : total concentration of salts in the natural seawater, which has to be sampled/filtered

$V_{art}$  (l) : desired volume of the artificial seawater

$S_{art}$  (gr) : amount of salt mixture necessary for the production of artificial seawater of the desired volume and with the same salinity as the natural seawater, which has to be sampled/filtered

$$CONC_{nat} = SAL_{nat} \quad (1)$$

$$S_{art} = CONC_{nat} \times V_{art} \quad (2)$$

### 2 PRODUCTION

- (1) Use a piece of tin foil for the weighing of  $S_{art}$
- (2) Split the total amount of sea salt in portions for a 5,0 liter volume
- (3) Placed the 5,0 liter glass bottle on the magnetic stirrer
- (4) Pour 4,5 liter of still drinking water into the glass bottle (do not use potable water from the tap!)
- (5) Add magnet to the glass bottle
- (6) Stirr the water in the bottle
- (7) Add the amount of sea salt for 5,0 l artificial seawater to the glass bottle
- (8) Plunge the sensor of the conductivity meter into the glass bottle
- (9) Monitor the salinity until the value remains stable
- (10) Add 0,5 l of still drinking water to the glass bottle
- (11) Monitor the salinity until the value remains stable
- (12) Add sea salt or still drinking water to adjust the salinity to the desired value

(13) Remove magnet and sensor from glass bottle and close glass bottle tightly

### **3 STORAGE**

(1) Store the artificial seawater in a dark, cool place for at least 4 days prior to use.