

# TOTAL REEF ICP TEST



**Sample ID:** 012662H

**Sample type:** Seawater

**Volume aquarium in Litre:** 284

**Sample name:** 75 Gallon

**Sampling date:** 10-30-2023

**Date of receipt:** 11-13-2023

Method: ICP-OES (inductively coupled plasma with optical emission spectrometry) and further procedures specifically for seawater.

Recommended values are optimized for coral reef aquariums.

You can find detailed information on the elements as well as recommendations for action and precise dosing instructions at:

<https://lab.faunamarin.de/en/home/analysis/97048>

## Basic physical-chemical values

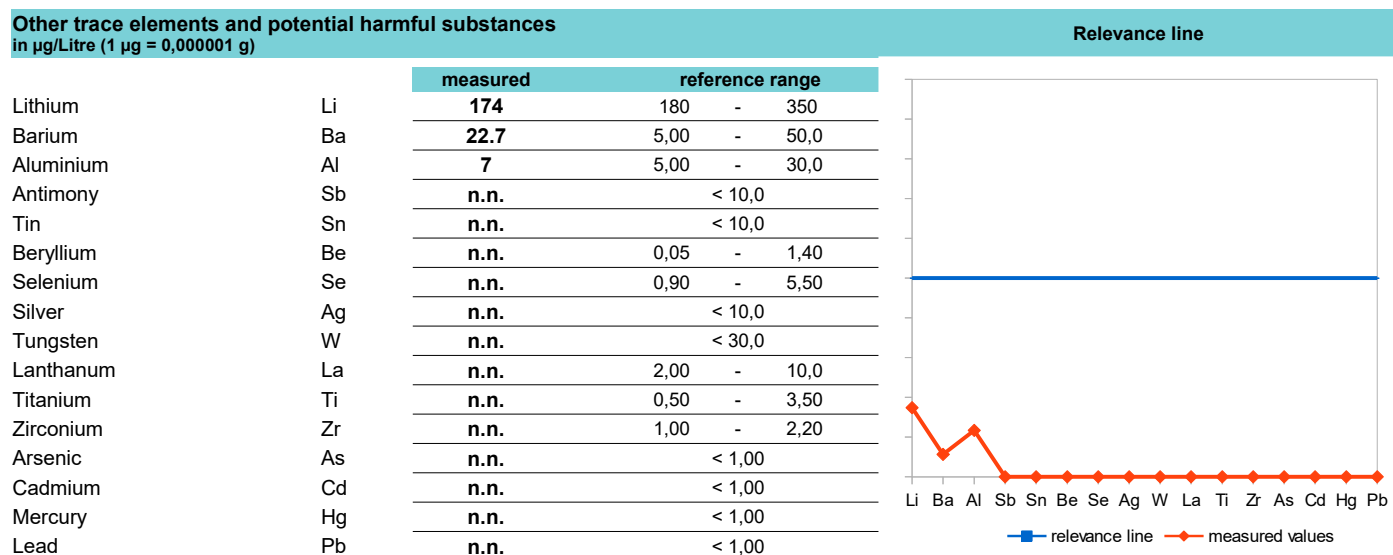
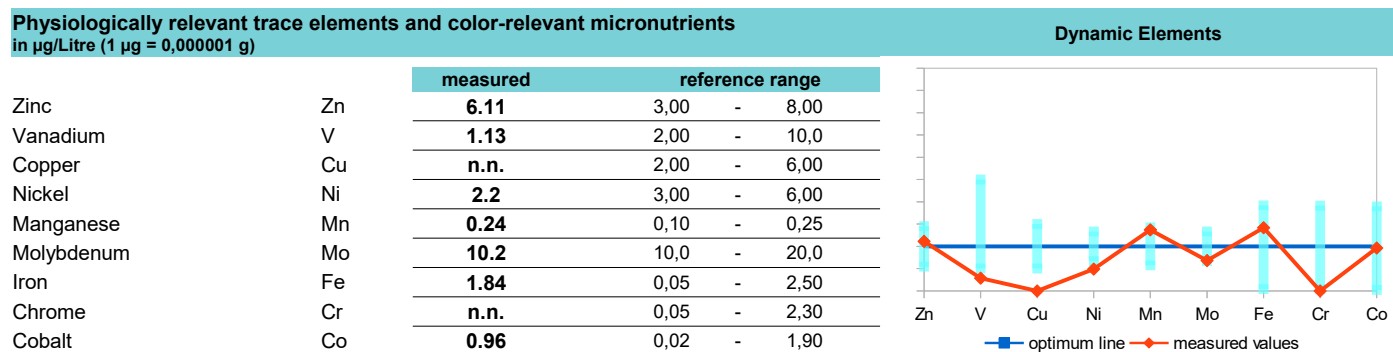
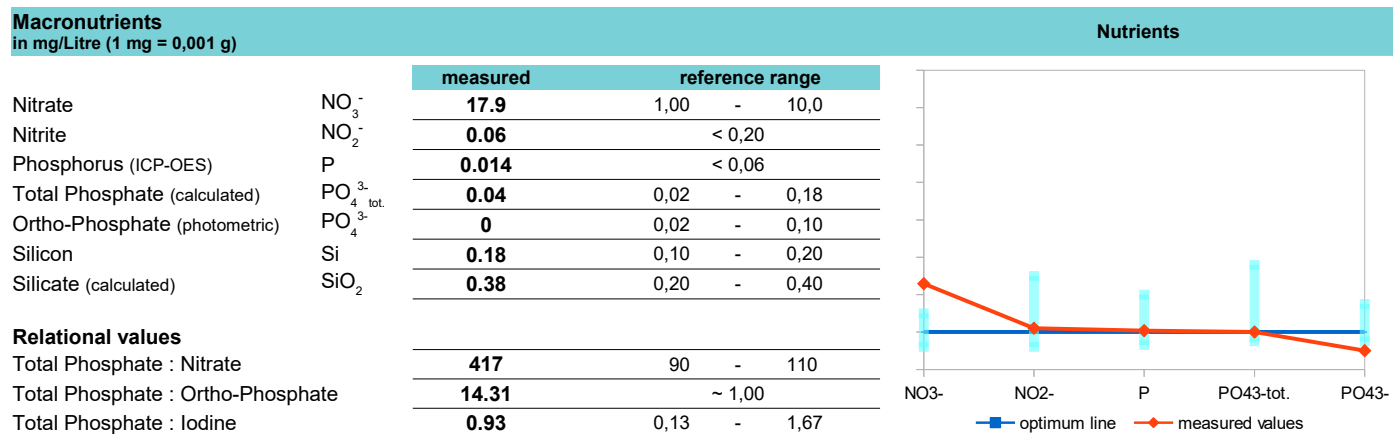
	measured	reference range
Conductivity (mS/cm 25°C)	47.8	51,7 - 53,0 - 54,5
Density (kg/Liter 25°C)	1.02	1,022 - 1,023 - 1,024
Specific density (25°C)	1.023	1,026 - - 1,027
Salinity (ppt, psu)	31.1	34,0 - 35,0 - 36,0
pH level	7.7	7,90 - 8,30 - 8,40
Carbonate hardness (in °dKH)	8.2	6,5 - 7,3 - 8,5
CO <sub>2</sub> (mg/l)	4.75	0,04 - - 2,5
acid binding capacity pH 4,3 (mmol/L)	2.93	2,3 - 2,58 - 3,0
odor	none	none
colour	none	none

## Major elements, lime elements and halogens in mg/Litre (1 mg = 0,001 g)

	measured	reference range	rel. 35 psu
Chloride Cl <sup>-</sup>	17223	18700 - 19500 - 20300	19374
Sodium Na	9674	9500 - 10700 - 11500	10882
Sulphur S	818	850 - 900 - 950	920
Sulphate SO <sub>4</sub> <sup>2-</sup>	2451	2550 - 2700 - 2850	2757
Potassium K	370	380 - 395 - 420	416
Boron B	4.27	3,80 - 4,50 - 5,50	4.8
Magnesium Mg	1312	1200 - 1350 - 1450	1476
Calcium Ca	514	400 - 425 - 440	578
Strontium Sr	9.62	6,50 - 8,00 - 9,00	10.82
Bromine Br	57.9	55,0 - 67,0 - 75,0	65.1
Fluoride F <sup>-</sup>	0.98	0,90 - 1,30 - 1,60	1.1
Iodine (total iodine, ICP-OES) I	0.046	0,055 - 0,065 - 0,080	0.052

## Relational values major elements and halogens - graphic representation salinity line

	relational value	reference range	Salinity line
Salinity measured : nominal Sal.	0.89	0,97 - 1,00 - 1,03	
KH measured : nominal KH	1.13	0,90 - 1,00 - 1,17	
Magnesium : Salinity Mg	42.2	33,3 - 38,6 - 42,6	
Calcium : Salinity Ca	16.5	11,1 - 12,1 - 12,9	
Strontium: Salinity Sr	0.31	0,18 - 0,23 - 0,26	
Potassium : Salinity K	11.9	10,6 - 11,3 - 12,4	
Boron : Salinity B	0.14	0,11 - 0,13 - 0,16	
Chloride : Salinity Cl <sup>-</sup>	554	519 - 557 - 597	
Sulphate : Salinity SO <sub>4</sub> <sup>2-</sup>	78.8	71,0 - 77,0 - 84,0	
Chloride : Sulphate Cl <sup>-</sup> /SO <sub>4</sub> <sup>2-</sup>	7.03	6,60 - 7,20 - 8,00	
Magnesium : Calcium Mg/Ca	2.55	2,70 - 3,20 - 3,60	
Calcium : Strontium Ca/Sr	53.4	44,0 - 53,0 - 68,0	
Bromide : Fluoride Br <sup>-</sup> /F <sup>-</sup>	59.1	34,0 - 52,0 - 83,0	
Fluoride : Iodine F <sup>-</sup> /I	21.3	11,0 - 20,0 - 29,0	



Osmosis water in mg/Liter (1 mg = 0,001 g)			measured		reference range	
Calcium	Ca		n.n.		n.n.	
Potassium	K		n.n.		n.n.	
Magnesium	Mg		n.n.		n.n.	
Sodium	Na		n.n.		n.n.	
Sulphur	S		n.n.		n.n.	
Phosphorus (ICP-OES)	P		n.n.		n.n.	
Total Phosphate (calculated)	PO <sub>4</sub> <sup>3-</sup> <sub>tot.</sub>		n.n.		n.n.	
Silicon	Si		2.39		n.n.	
Silicate (calculated)	SiO <sub>2</sub>		5.14		n.n.	

in µg/Liter (1 µg = 0,000001 g)		
Aluminium	Al	n.n.
Lead	Pb	n.n.
Cadmium	Cd	n.n.
Chrome	Cr	n.n.
Iron	Fe	n.n.
Copper	Cu	n.n.
Lithium	Li	n.n.
Nickel	Ni	n.n.
Mercury	Hg	n.n.
Tin	Sn	n.n.
Zinc	Zn	n.n.

Measured values of type "> 24" indicate that the concentration is above the calibrated range and therefore cannot be determined definitively. In these cases it is indicated how much at least is present (e.g. 24 µg/l). Abbreviations: n.g. (not measured), n.n. (not detectable).