HOW TO USE

FAUNA MARIN
BALLING LIGHT SYSTEM

The simple basic supply system
for all seawater aquariums.

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The Balling Light System is an extremely uncomplicated method for the supply of the aquarium with all necessary growth and colour forming substances for corals and reef biology.

As a seawater aquarium supply system it is unique in composition, dosage and effect.
Fauna Marin has been using the Balling Light System continuously for over 20 years now and adapted to modern aquaristics.
Through our FAUNA MARIN ICP laboratory and daily use in our large coral breeding facility this development will continue.

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Basic supply of the reef aquarium with calcium, magnesium, carbonate hardness and trace elements

Our Balling Light System is compatible with all kinds of filtration methods.
It is a complete system that provides your aquarium with a perfect supply of calcium, alkalinity, magnesium and trace elements all while maintaining a balanced ion spectrum.

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Demand-based dosing vs theory-based dosing

The Balling Light System is a primary care system where dosage amounts are completely demand-oriented.

Our system respects the fact that not all aquariums have the same set of needs. Given these differences, the Balling Light System is very flexible in that it can be adjusted to meet the dosage needs of any aquarium. With a simple water test, you can see exactly which element needs extra dosing and make the necessary adjustment. By having this level of control you dose only what your aquarium needs; just enough to meet the Ca, Alk, Mg demand of your coral. Theoretical calculations and assumptions are NOT used with Balling Light.

Balling Light requires you to dose only what is consumed and needed by your coral.

It is important to understand that this system provides the foundation for coral supplementation. It is therefore suitable as a complete and cost-effective replacement to Calcium Reactors.

In many countries, this method has almost replaced the once-popular Calcium Reactor. Today, more and more saltwater aquarists are supplementing their Calcium Reactors by using Fauna Marin Balling-salts to compensate for chemical imbalances.

These chemical imbalances typically come from the kinds of products being used. The common issue of under or over-dosing generally emerges from sea salts, trace element additions from many different sources, and from pre-mixed solutions. These kind of products provide a generalized dosage schedule based on theory rather than consumption. This method of dosing becomes a problem for the hobbyist because it leaves no room for individualized adjustments or correct calculations based on the specific demand of their aquarium.

When one adds individual elements without regard to the overall impact on the aquarium, the outcome is usually the desired element being changed at the cost of affecting another. Such actions can therefore start an uncontrollable vicious cycle along with constant chemical imbalances.

The big problem here is that with this kind of dosing method, the important organic processes (such as biofilms) of the aquarium do not get recognized. The result of continued dosing is a permanently unstable aquarium with a high depot factor and risk for Old Tank Syndrome. When an aquarium has reached this state, unwanted algae growth and dangerous bacterial deposits such as cyanobacteria, dinoflagellates or significant coral color loss and tissue disintegration begin to appear.

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The Solution!

The Balling Light System avoids the issue of chemical imbalances from the start because it relies on the individual conditions of the aquarium. Rather than blindly supplying elements to the aquarium, one can add the necessary amount of Ca, Alk, Mg, and Trace Elements based solely on what the aquarium consumes.
To further aid in restoring and maintaining chemical balance, we've developed and added an Organic Peptide Polymer to our Balling salts. This key ingredient helps remove excess elements from the water column. It acts as a carrier material that travels through the water column, attaching excess elements to it.
As it travels through your entire system, it is steadily removed by the protein skimmer.

Ultimately, the Balling Light System provides your aquarium with the correct ratios of trace and macro elements for exceptional coral health. It also forms the perfect foundation for starting any future aquarium management system such as the US STYLE PRIMEFRAG SYSTEM.

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Basics of the Balling Light System

Water Changes

We recommend regular water changes with our PROFESSIONAL SEA SALT.
Water changes have always been the go-to method for removing unwanted waste material from the aquarium. By performing regular water changes, waste material can be removed and replaced with perfectly balanced water.

Even nature's reefs get water changes:
Ocean tides and currents are essentially nature's way of doing water changes.
As the tide comes in, the reefs are always supplied with fresh seawater.
We recommend a water change of about 5 – 10 % per week.

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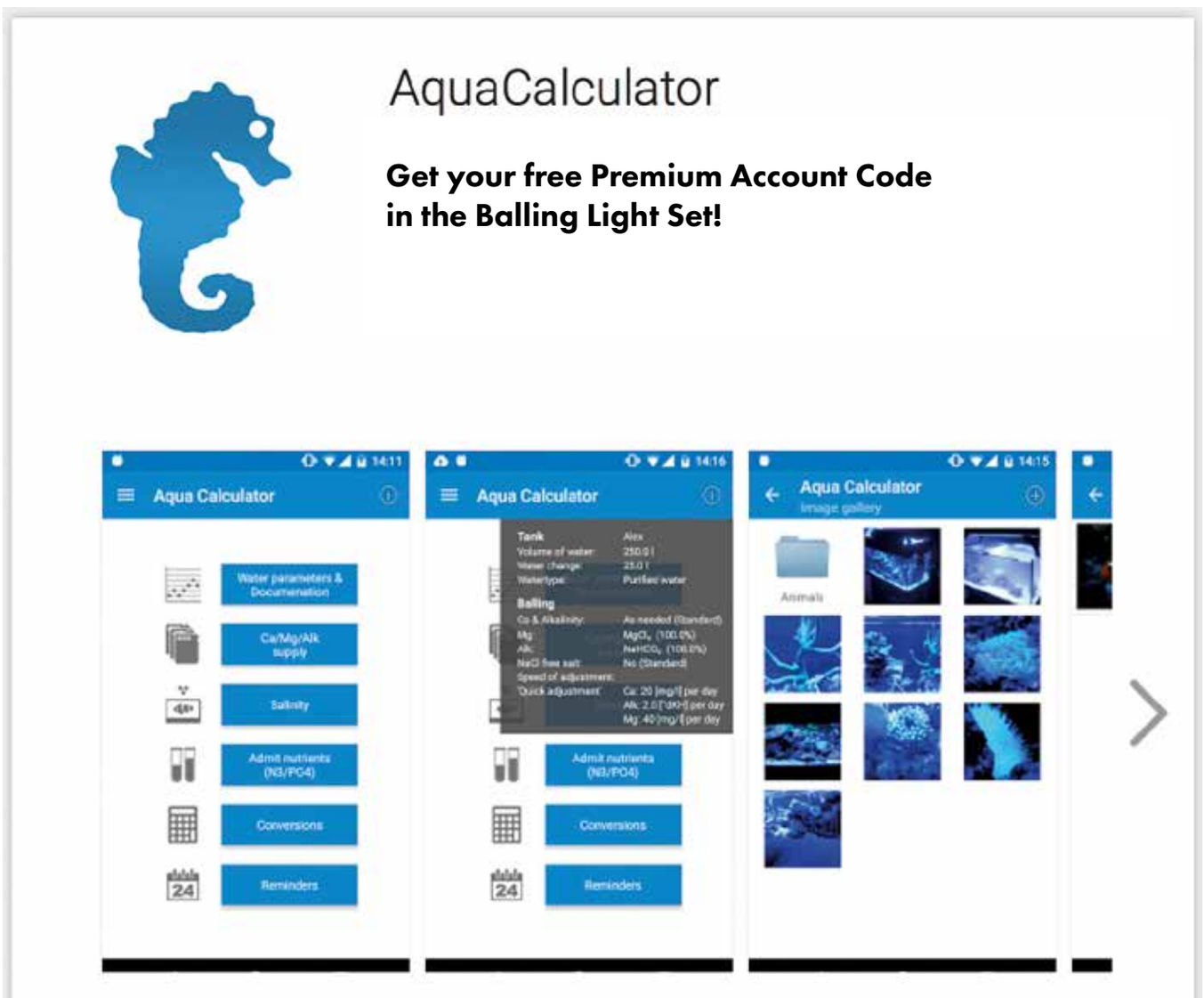
Calculating the dosage for your aquarium using the AquaCalculator

AquaCalculator provides the quickest and most convenient way to calculate your starting dosage.
In order to calculate your appropriate dosing quantities for the Balling Light System,
go to **www.aquacalculator.com** and find the matching Balling Light Online calculator.
This is the only online tool which follows the correct FAUNA MARIN Balling Light recipe.



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With FAUNA MARIN Balling Light salts you get the purist special salts that are just-right for the marine aquarium

Our salts correspond to the highest levels of purity as needed for the marine aquarium. Commonly used names such as „dialysis" salts are not a quality feature as they are very often unsuitable for the successful care of hard corals. When producing our Balling Light salts, we not only look at the datasheet for the salts, but also take it a step further by controlling the organic and inorganic trace element content of the salts.

Our salts are made with additional bioactive stabilizers, pH buffer, and minerals which significantly increase the stability of the chemical parameters in the aquarium. The addition of our trace elements keep the solution stabilized and help the elements become more readily available for the corals to consume. Quite often the Trace element content of commercially available sea salts are either missing or limited. The addition of Balling Light Trace Elements help close the missing elements gap and provide the coral with baseline elements necessary for proper health, color, and growth.

The supply of bioactive components and purity of the salts prevent coral tissue darkening and increases growth and color formation.

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FAUNA MARIN Balling salts are not easy to compare to other products!

- More effective due to high-purity salts with the lowest water content
- Specialized salt mixtures provide improved stability of important parameters
- Adapted to modern sea salts and lighting technology
- Stabilized pH value
- Feeds bio-active substances for improved color development and coral growth

With the Balling Light Method, you can precisely feed the exact substances that are missing from the aquarium.

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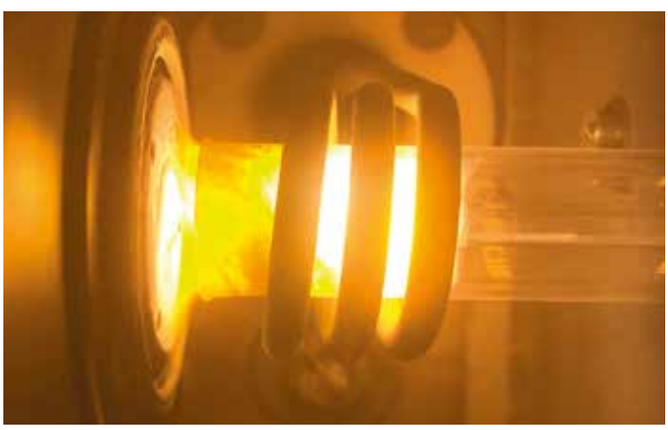
What is innovative about the Balling Light System?

• FAUNA MARIN Balling Light salts are made with high purity salts with the lowest water content. This characteristic allows every batch to be highly concentrated. The system as a whole provides the most effective method for the primary care of corals along with a customized macro and micro-bound trace element supply based on the Calcium and Carbonate Hardness consumption of your aquarium.

• The individual element mixtures that make up the system allow you to precisely adjust each mixture to meet the needs of YOUR aquarium. Fine-tuned adjustments can be done regularly with your own test kits and with our FAUNA MARIN laboratory ICP tests.



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Trace elements for improved growth and metallic shine-effect of corals

Our continued research at the FAUNA MARIN ICP Lab has allowed us to further optimize our elemental blends. Through the introduction of rare trace substances and our bioactive Organic Peptide Polymers, we've created a blend that greatly improves the effectiveness and coral usability of these elements.

Our special trace element mixture not only benefits your coral, but also your fish and important strains of bacteria. By providing these necessary elements, the important nutrient cycles become stable and allow for more effective processing of nutrients.

Thanks to our use of extremely pure salts and added chemical reaction stabilizers, the direct biological usability of our salts allow for batches of balling solutions to last longer. When you make Balling Light solutions with the perfect amount of balling salt, you essentially make a gentle solution that allows your aquarium to slowly adapt to the addition of Balling Light solutions either with a dosing pump or manually. Because users have individualized control over the concentration of the main solutions, the Balling Light System can be used on a wide range of aquarium sizes; very small aquariums up to large coral breeding facilities.

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Advantages of using the Balling Light System

- Complete supply system based solely on the actual consumption and needs of coral
- Contains the highest possible concentration of effective salts
- Easy to dose via dosing pump or manually
- Contains newly developed Organic Peptide Polymers for the stabilization of chemical reactions
- Organic Peptide Polymers also aid in the export of excess elements
- Scientifically based quality control and continuous development in the FAUNA MARIN ICP laboratory.
- Continuously developed to adapt to modern aquarium management methods
- Provides stable water values
- Promotes healthy coral growth and long-term stability in aquariums
- Prevents the dreaded Old Tank Syndrome by maintaining chemical balance
- Concentrated dosages without needing complex calculations
- Proven method for Ca, Alk, Mg, and Trace Element supplementation
- One of the world's most widely used supply systems; perfect for a successful SPS aquarium

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For the Balling Light System you will need:

e.g. Balling Light Set which includes the following:

- 1 x 2 kg (4 lb) BALLING LIGHT CALCIUM MIX
- 1 x 2 kg (4 lb) BALLING LIGHT MAGNESIUM MIX
- 1 x 2 kg (4 lb) BALLING LIGHT CARBONAT MIX
- 1 x 250 ml BALLING LIGHT TRACE 1
- 1 x 250 ml BALLING LIGHT TRACE 2
- 1 x 250 ml BALLING LIGHT TRACE 3
- 3 x 5,0 Liter (1,32 US gal lqd) Canister with hose connection
- 3 x Connecting hoses 4/6 mm
- 3 x Identification labels for canisters + for the doser
- 1 x ID CODE for free-use of AquaCalculator Premium Account

+ OPTIONAL Dosing Pump with at least 3 dosing heads

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Instructions for the Balling Light System

Recommended water values:

- **Calcium** **400 – 440 mg / Liter (0.26 US gal lqd)**
- **Magnesium** **1200 – 1350 mg / Liter (0.26 US gal lqd)**
- **Alkalinity** **6,5 – 8 dkH**
- **Salinity** **33 – 35 ppt**

How to prepare Calcium Mix

Place each of the three 5-liter (1,32 US gal lqd) canisters side-by-side as they will each be used to prepare the solutions.

Canister 1: CALCIUM

Dissolve 2 kg (4 lb) of BALLING LIGHT CALCIUM MIX in 3 Liters (0,79 US gal lqd) of RO water.

Add to this canister:

25 ml BALLING LIGHT TRACE 1
25 ml BALLING LIGHT TRACE 2

Fill the 5 liter (1,32 US gal lqd) canister to the top.

The total amount of solution will be more than 5 liters (1,32 US gal lqd), this is normal and intended.

CAUTION:
Solution in canister will heat up significantly when Calcium salt is mixed with water. Handle with care!

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Instructions for the Balling Light System

How to prepare Magnesium Mix

Canister 2: MAGNESIUM

Dissolve 2 kg (4 lb) of BALLING LIGHT MAGNESIUM MIX
in 3 Liters (0,79 US gal lqd) of RO water.

Fill the 5 liter (1,32 US gal lqd) canister to the top.

The total amount of solution will be more than 5 liters (1,32 US gal lqd),
this is normal and intended.

Nothing else is added to this canister!

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Instructions for the Balling Light System

How to prepare Carbonate Mix

Canister 3: CARBONATE

Dissolve 500 g (1 lb) of BALLING LIGHT CARBONATE MIX in 3 Liters (0,79 US gal lqd) of RO water.

Add to this canister:

25 ml Balling Light Trace 3.

Fill the 5 liter (1,32 US gal lqd) canister to the top.

The total amount of solution will be more than 5 liters (1,32 US gal lqd), this is normal and intended.

☺ **TIPP**

- In order to completely dissolve the solution, use lukewarm water and fill up the canister to the 5 l (1,32 US gal lqd) mark with water. Depending on the canister used, some un-dissolved salt may remain on the bottom.
- ATTENTION: Always add Balling Salts to the water – NEVER the other way around!
- In order to get consistent solutions, always measure and mix with the same amount of product. This prevents you from having to make any changes to your dosage amounts.

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☺ **TIPP**

If you wish to use different sized canisters (smaller or larger), feel free to do so.
In this case, you will have to simply adjust the amount of mix you add to each canister.
This also applies to our Balling Light Trace products.

How to calculate new values:
Value of the respective salt(s) and element solution x number of Liters (US gal lqd) in canister : 5 = Your new value

Recommended basic mix PER LITER:
(Also stored in the AquaCalculator app)

Calcium: 400 g (0.8 lb) Trace 1: 5 ml Trace 2: 5 ml	Magnesium: 400 g (0.8 lb)	Carbonate: 100 g (0.2 lb) Trace 3: 5 ml

Dosing of the working solution gives approx:

ALK/KH	10 ml / 100 Liter (26 US gal lqd)	+ 0,5 dkH / Liter (0.26 US gal lqd)
CA	10 ml / 100 Liter (26 US gal lqd)	+ 11 mg / Liter (0.26 US gal lqd)
MG	10 ml / 100 Liter (26 US gal lqd)	+ 5 mg / Liter (0.26 US gal lqd)

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Discoloration of the solution(s) is normal. The change will depend on the addition of the bioactive substances and trace elements together. These changes do not affect the quality or durability of the solutions. The longer the solutions remain in the canisters, the more discolored the solutions will become. This effect will also be noticed if the solutions are exposed to any light.

The solutions have a practically unlimited shelf life after dissolution.

“Manual Dosing”

The Balling Light System is also suitable for manual dosing.
When dosing, pour each solution into a high-flow area and wait at least 2 – 3 minutes in-between each dose.

Start by adding Magnesium, then Calcium, followed by Carbonate.

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Instructions for the Balling Light System

If you wish to dose your Balling Light solutions via a dosing pump,
connect the dosing tubes to your dosing pump.

Remember, the more often you dose, the more consistent your Ca, Alk, and Mg will be.
Manual daily dosing is also possible. For more info on manual dosing, please refer to the previous page.

In order to calculate your first Ca, Alk, Mg dose quantities, download the app, AquaCalculator.
Open the app and enter your aquarium data and current measured Ca, Alk, Mg values.
This will provide you with a starting dose schedule.

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Instructions for the Balling Light System - How to calculate the required dosing quantities

The actual dosage amounts needed your aquarium will depend on factors such as current stocking level, coral growth, coral type, etc. Below is an example of how to calculate the amount needed by your aquarium.

Example:

1. Test for Calcium BEFORE the first dose
2. Then add 50 ml of Calcium (Canister 1) per 500 liters (132,086 US gal lqd) of aquarium water

If your calcium value before the 1st dose is: 380 mg Calcium
Re-test for Calcium after 1 hour and the new value should now be closer to 400 mg Calcium.

The above example shows that by adding 50 ml of Calcium
to a 500 liter (132,086 US gal lqd) aquarium,
the calcium value increases by 20 mg / l (0,264 US gal lqd).

Knowing this, a dosing pump can now be scheduled to
add approximately 7 ml of Calcium every day;
50 ml of total solution added over 7 days
(7 ml * 7 days = 50 ml)

After 1 week, if you test for Calcium again and find that it is now only 390 mg / l (0,264 US gal lqd) instead of 400 mg / l (0,264 US gal lqd), further adjustment will be needed.

The above method helps determine the actual consumption of Calcium which needs to be replaced.
The actual drop in Calcium can be due to chemical precipitation, coral growth or consumption by water treatment agents.

You can now adjust the NEW dosing amount by simply taking your previously calculated dose and adding 3 ml per day to the daily dose.
50 ml = + 20 mg / 7 days = 7 ml
To reach the value + 30 mg, 75 ml / 7 days = 10 ml must be added.
By means of this simple calculation you can easily set each of your desired values in a few days and have them automatically re-dosed.

When starting Balling Light dosages, we recommend you test daily.
Calcium (CA test), Magnesium (MG test), and dKH values (KH test).
If necessary, adjust your dosing schedule.

☺ TIPP
We recommend that you check your water tests with the Fauna Marin REFERENCE SOLUTION.
To get started, use our highly accurate laboratory tests from the Fauna Marin ICP laboratory
to have a good and accurate start for the Balling Light System.

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Instructions for the Balling Light System

It usually takes 2 – 4 weeks of dosing adjustments to find the specific dosing needs of your aquarium, during which time frequent testing should be performed.

Salinity adjustments and water changes

When you do regular water changes, you help your aquarium export unwanted substances from the system and also help maintain control of your salinity. Based on our experience with thousands of aquariums, we know that the best possible aquariums are achieved when regular water changes are performed. Filtration equipment such as Skimmers and filter media are capable of only removing a portion of the present waste material. By doing water changes, you avoid the over-accumulation of waste material and help maintain a healthier system. For that reason, we recommend 5 – 10 % water changes every week.

☺ **TIPP**
Please measure the Salinity of your aquarium regularly and make adjustments if necessary.
We recommend maintaining Salinity between **33 – 35 ppt**.
Simply use the regular water change. You also save sea salt.

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Dosage after elemental analysis

As mentioned earlier, it is usually not necessary to dose individual elements into an aquarium system. More importantly, it is helpful to distinguish the relationship between macro and trace elements. Between the thousands of evaluations performed here at our laboratory and at others, tests have shown that the elemental needs of over 80% of all aquariums can be fulfilled with just the standard Balling Trace element dosage.

The standard dosage of 25 ml per 5 Liter (1,32 US gal lqd)
can be adjusted as follows:

Small aquariums, slightly mixed stock:	TRACE 1: 20 ml	TRACE 2: 15 ml	TRACE 3: 20 ml
Medium aquarium, well mixed stock:	TRACE 1: 25 ml	TRACE 2: 20 ml	TRACE 3: 25 ml
SPS aquariums, Zeolite filtering:	TRACE 1: 50 ml	TRACE 2: 30 ml	TRACE 3: 25 ml
US Style Primefrag® System:	TRACE 1: 60 ml	TRACE 2: 25 ml	TRACE 3: 30 ml

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Potassium

In this HTU guide you may have noticed that there was no mention of Potassium dosing.
Dedicated dosing of this element is not necessary with the Balling Light System because it is typically replenished through regular water changes and dosage of Balling Light Trace 1 – 3.
If you are running a system such as the Zeo-Light System, additional Potassium dosing may be needed.
For this purpose, you can use our ELEMENTALS K.

Information about dosing additional elements

If you feel the need to supply your aquarium with additional elements or need to make additional coral color adjustments, we recommend you use our Color Elements series.
With these additional elements, you can significantly enhance coral coloration and stimulate coral growth.

For more information or individual advice, please contact us directly on our support forum:
http://forum.faunamarin.de

Additional instructions and information on corals and our products can be found on our website and download center:

www.faunamarin.de
www.faunamarin.de/en/support-downloads/

Wishing you much success!
FAUNA MARIN GmbH

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