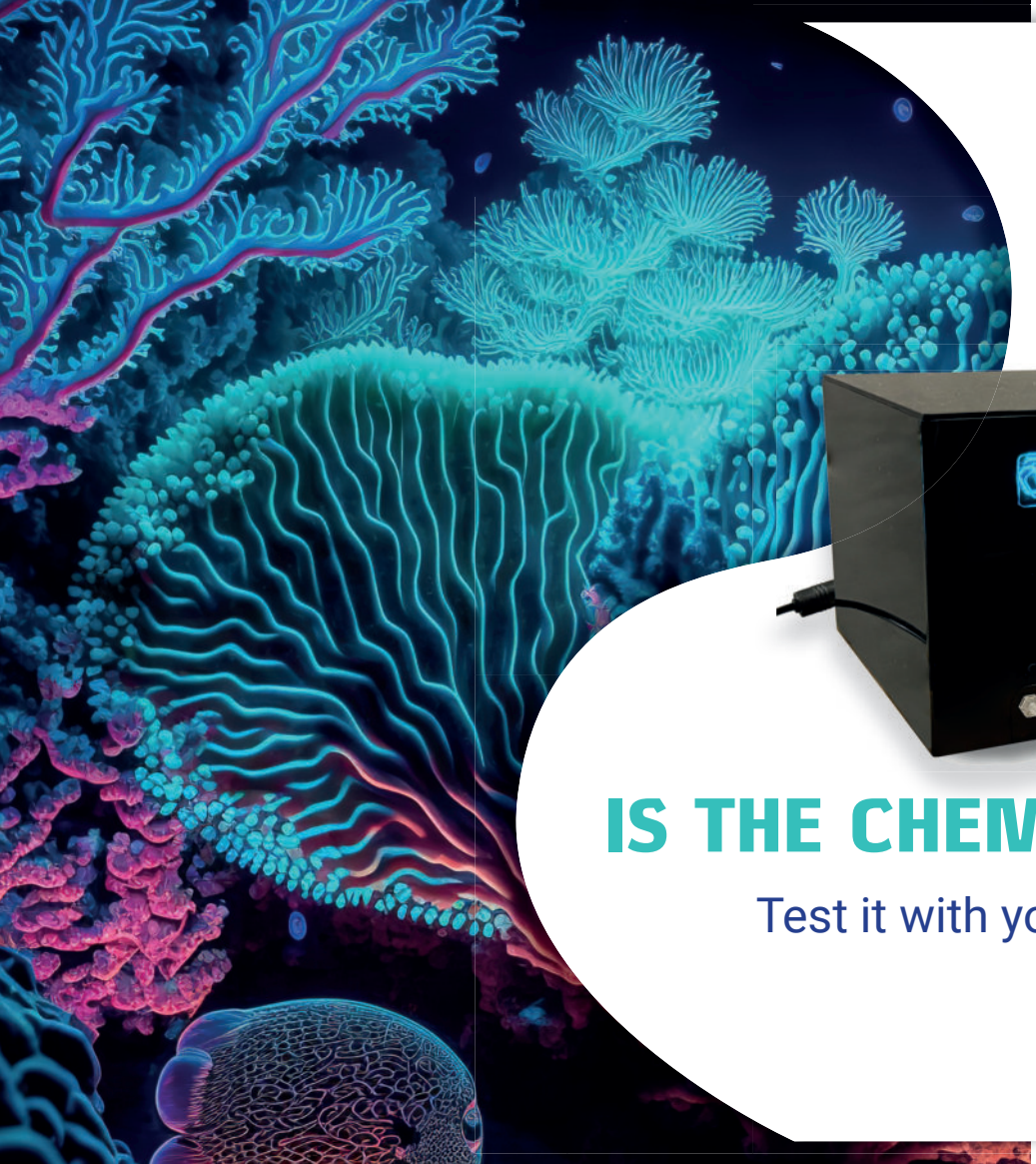

IS THE CHEMISTRY RIGHT?

Test it with your Korallenwächter

Hi! THIS IS YOUR KORALLENWÄCHTER

The Korallenwächter (Coral Guard) helps you to keep your water quality stable by automatically measuring the concentrations of magnesium, calcium and alkalinity. The Korallenwächter is designed to be permanently installed in the aquarium and to take regular measurements. In addition to aquarium water, you will need osmosis water and a suitable container for the resulting waste water. In addition, reagents are consumed for each measurement, which are contained in the cartridges used. As soon as a cartridge is empty, you will receive a message in the app and can replace it with a full one from us. You can find out how the Korallenwächter works and how to set it up on the following pages.

- WATER ANALYSIS SIMPLY RELIABLE -

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FACTS, FIGURES AND DATA

ABOUT YOUR KORALLENWÄCHTER

In this section you will find all the important key data about your Korallenwächter. Learn how it is constructed, how big it is and what it wants to tell you with the different colors of its status LED.

SCOPE OF DELIVERY

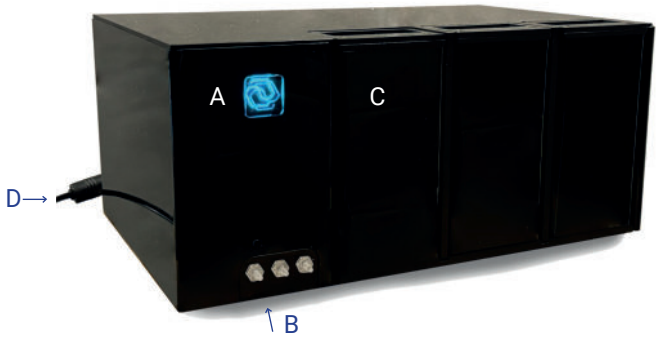
Accessories:

1 Korallenwächter measuring system
1 power supply unit
3 1.5m hoses
1 manual
1 tube filter

Consumables:

1 filled cartridge for measuring calcium
1 filled cartridge for measuring magnesium
1 filled cartridge for measuring alkalinity

COMPONENTS



A) Status LED
B) Hose connections
C) Chemical tanks
D) Power supply

TECHNICAL DATA

Characteristics

Measuring device	Specification
Measuring range KH	3,5 - 10°dKh
Resolution KH	0.1° dKh
Measuring range Ca	300 - 500 mg/l
Resolution Ca	5 mg/l
Measuring range Mg	850 - 1500 mg/l
Resolution Mg	18 mg/l

Dimensions

Measuring device	Specification
Width	300 mm
Depth	190 mm
Height	140 mm

Electrical data

Power supply unit	Specification
Input voltage	100 - 240 V AC
Output voltage	12 V DC
Frequency	50 / 60 Hz
Power	36 W

Status LED

Color	Meaning
Turquoise	Ready for use
Flashing turquoise	Measurement/update in progress
Red / Coral	Error/fault
2x flashing turquoise	Cartridge detected

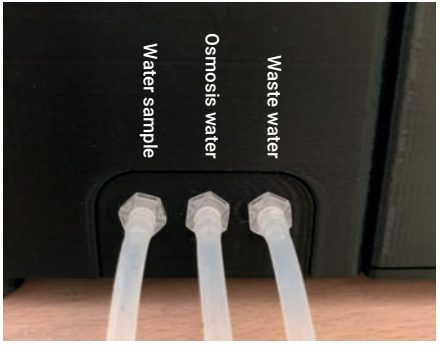
BRING YOUR KORALLENWÄCHTER TO LIFE

15 min

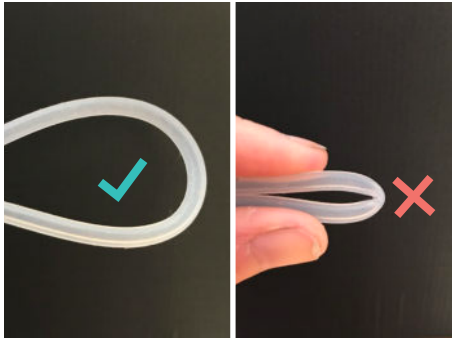
In this section you will learn how to set up your Korallenwächter and what you need to bear in mind. Follow the steps carefully and your Korallenwächter will be up and running in no time!

1. Unpack the Korallenwächter and admire your new possession. Remove the cartridges first, as you will only activate them at a later date.

2. Choose a suitable place for your Korallenwächter where it feels comfortable and the cartridges remain easily accessible for you. The Korallenwächter should be placed on a horizontal surface.



3. Connect the hoses as shown in the illustration above. It is important that you never lead the waste water hose into the aquarium!



4. Route the hoses in the way that suits your aquarium best. You can shorten the hoses as required, the maximum hose length is 1.5 m. Make sure that the hoses are not kinked.

Take the sample correctly:

Attach the tube filter to your sample hose and select a suitable place to take the sample. You can take the sample either in your main tank or your technical tank. Make sure that the hose always remains under water without being kinked. The sampling point should NOT be:

- Be close to the skimmer
- Be behind a flow filter
- Have a strong flow
- Located in a “dead” corner
- Close to a (return) pump
- Close to a heating element

Remove osmosis water correctly:

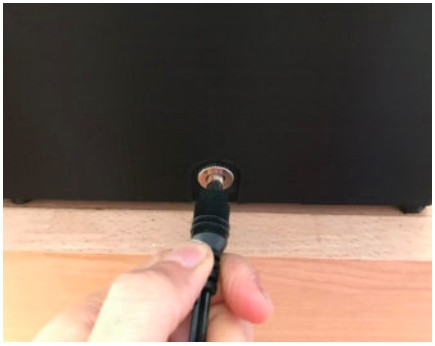
If you take the osmosis water from a tank, then make sure that the hose is NOT directly to an automatic refill system, as it can draw air there and that it is always under water without being kinked.

If you take the water from a canister, make sure there is an additional air hole in the lid. For the osmosis water container, we recommend a size of at least one liter. Caution! In canisters, the end of the hose can quickly move upwards so that it is just above the surface of the water, which leads to incorrect measurements. We recommend using a transparent container that is always sufficiently full.

BRING YOUR KORALLENWÄCHTER TO LIFE

Collect wastewater correctly:

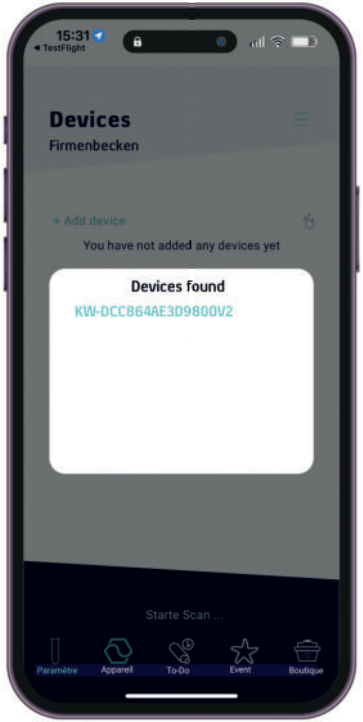
We recommend a waste water container of at least one liter. Make sure that the waste water can NEVER get back into the aquarium or into the hands of children! Please use a lid for the container and provide an additional air hole.



5. Connect the supplied power supply unit to your Korallenwächter and bring it to life.

That's it for the hardware!
In the next step you can integrate your coral guard in Typus.

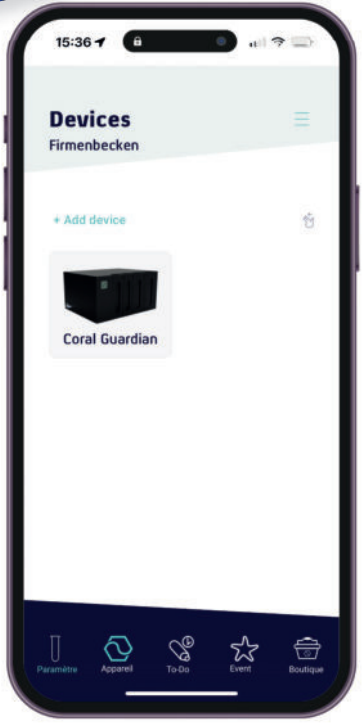
6. Download the Typus app and create an account. You can find Typus using the QR code shown or by searching in the App Store or Google Play Store.



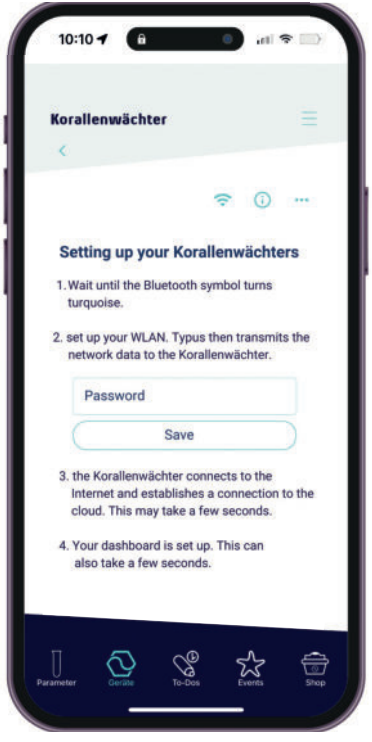
7. Open the “Devices” tab in the app and select “Add device”

Depending on your operating system, you will be asked whether the app is allowed to determine your location or whether “Find devices nearby” is permitted. Please confirm this message. Otherwise your Korallenwächter cannot be found.

8. The app scans the surroundings for a Korallenwächter and then shows you your Korallenwächter ID. Select it and click on “connect”.

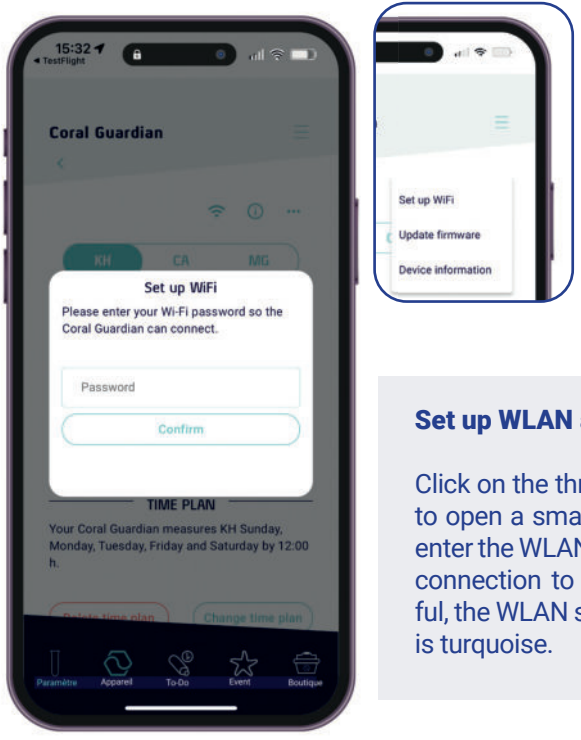


9. Then click on the “Korallenwächter” tile again to go to the settings and overview page. Follow the instructions there for the initial setup.



10. Now take the cartridges and remove first the yellow and then the blue plugs. Place a cloth underneath to be on the safe side. Be sure to keep the plugs! Now you can insert the new cartridge into your Korallenwächter. Push it in completely without applying pressure until it clicks.

That's it already! Now you can start a measurement immediately. However, we recommend calibrating the coral monitor first. Don't worry, this can be done very quickly.



Set up WLAN again

Click on the three dots at the top right to open a small menu. There you can enter the WLAN password again. If the connection to the WLAN is successful, the WLAN symbol in the status bar is turquoise.

HOW TO CALIBRATE YOUR KORALLENWÄCHTER

CALIBRATION WITH MULTI-REFERENCE

45 min

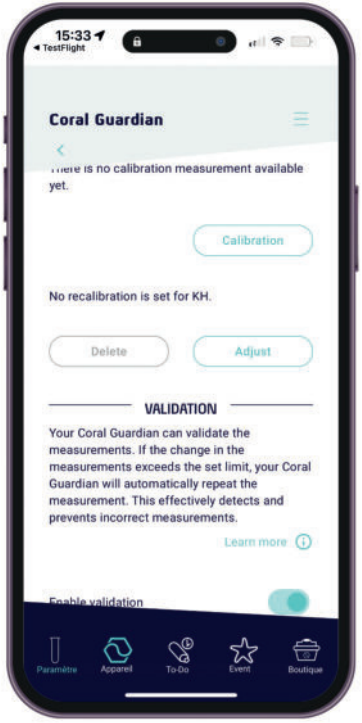
*Your Korallenwächter only needs a **calibration with reference once or twice a year!** We recommend a manual calibration to bring your values into line with those of your ICP. You can find out how to do this and what the difference is on the following pages.*

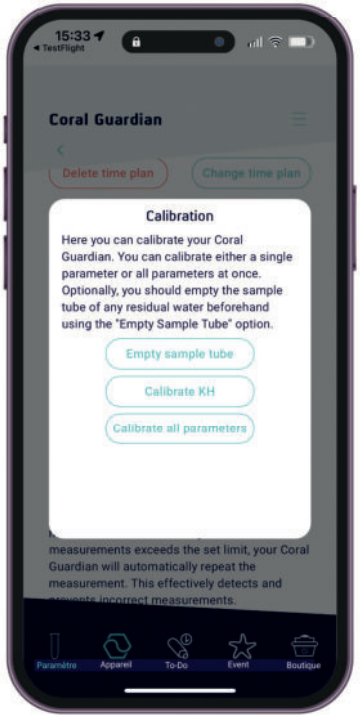
Attention! Calibration measurements are not suitable for the manual calibration.

1. Make sure that the Korallenwächter is not taking any measurements at the time of calibration and select Calibrate in Typus. Take the sample tube out of your aquarium and empty it via the app.

2. Hold the hose in the Korallenwächter reference and make sure that the end of the hose is completely under water.

3. Now you are ready to start. Make sure that the sample tube cannot fall out of the reference and that there is sufficient osmosis water and capacity in the waste water tank. Up to 500 ml of waste water is produced during calibration.





You can then start the calibration. Calibration runs automatically and takes approx. 30-45 minutes. The reference is almost completely used up.

4. As soon as the calibration is complete, you will be informed on the device page whether the calibration was successful or not. If the calibration was not successful, check whether the hose fell out of the reference during calibration, whether sufficient osmosis water was available or whether your cartridges are empty.

If the calibration is successful, you will receive a control value in Typus for each parameter.

The control measurement appears under the Calibration tab. The control measurement should match the values of the reference except for the expected measurement fluctuations. The maximum expected measurement fluctuations are:

KH: ± 0,15 °dKh
CA: ± 10 mg/l
MG: ± 25 mg/l

After calibration, you can connect the sample tube to your aquarium and start a regular measurement. Your Korallenwächter is now ready for use.

HOW TO BRING EVERYTHING TO THE SAME LEVEL

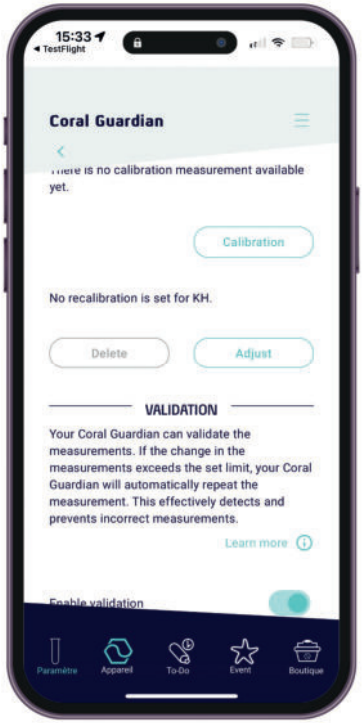
MANUAL CALIBRATION OF YOUR KORALLENWÄCHTER

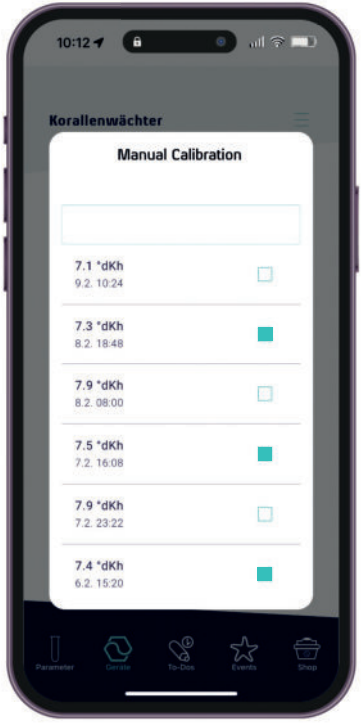
As fluctuations can always occur when measuring the water quality, you should take several measurements into account when calibrating manually. You can run the measurements on a schedule, although you should be aware that the values in your aquarium can change over time. The time interval between measurements should therefore be as short as possible.

1. Ideally, you should start three measurements in succession or select three measurements that have already been carried out in Typus. Typus only shows you those measured values that are suitable for manual calibration.

2. After selecting the measured values, you can enter the value to which you want to adjust. Typus now calculates the factor from this and adjusts all future measured values accordingly.

It is important that the measurements of the Korallenwächter also correspond to the time and place (main or technical tank) at which you carried out the reference measurement. In the case of the ICP, this is the time of sampling!





AUTOMATIC VS. MANUAL CALIBRATION

WHAT IS FOR WHAT AND WHY?

Automatic Calibration

We differentiate between automatic and manual calibration for the Korallenwächter. With automatic calibration, we ensure that the measured values of the Korallenwächter match our reference and cover the measuring range. This calibration is recommended 1-2 times a year.

Manual Calibration

Perhaps you are using a different reference or would like to calibrate your Korallenwächter with an ICP or a water test measurement. In this case, manual calibration is the right tool. You can use this to manually adjust the measured values of your Korallenwächter to a target value.

Why should you do that?

Depending on the measuring equipment and measuring method, e.g. water test or ICP, there may be deviations between the measured values. It is important for your aquarium inhabitants that the water values are as constant as possible. We therefore recommend that you choose a measuring method (e.g. ICP) and regularly adjust your Korallenwächter accordingly.

THE CARTRIDGE SYSTEM

NOTHING EASIER THAN THAT

In this section you will learn everything you need to know about the cartridges and how to replace them. The cartridges contain reagents for 50 measurements and are reusable. You can exchange empty cartridges for filled ones in our store. Replacing the cartridges is done in no time, the following steps will help you.

1. Remove the used cartridge from the Korallenwächter by pulling it out to the front. Remove the sealing plugs from the new cartridge and use them to seal the used cartridge. Caution! Always remove the orange sealing plugs first so that the pressure can escape. Place put a kitchen towel underneath for safety**.**

2. Now select the “New cartridge” option in Typus. You can then scan the QR code or enter the ID of the cartridge in the text field.

3. Now you can insert the new cartridge into your Korallenwächter. Push it all the way in until it clicks.

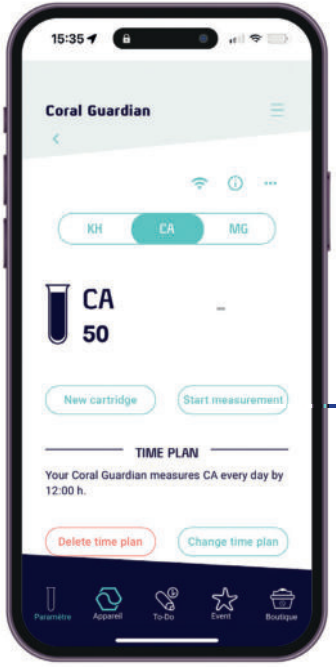
4. Pack the used cartridge in the box of the new one and use the enclosed return label. Now all you need to do is hand in the used cartridge at the post office.

5. As soon as we have received your empty cartridges, we will refund your €10 deposit.

The Korallenwächter counts how many measurements are left for you. It is completely normal for used cartridges to still contain a small amount of liquid.

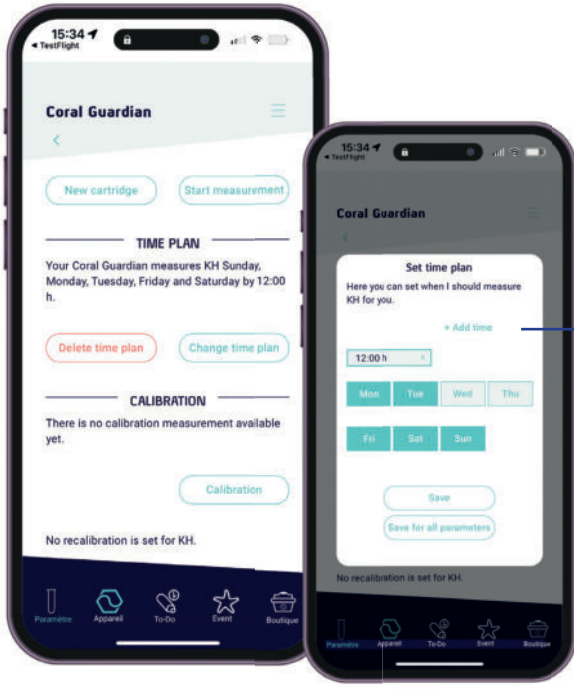
KORALLENWÄCHTER IN TYPUS

EVERYTHING IMPORTANT AT A GLANCE



Start measurement

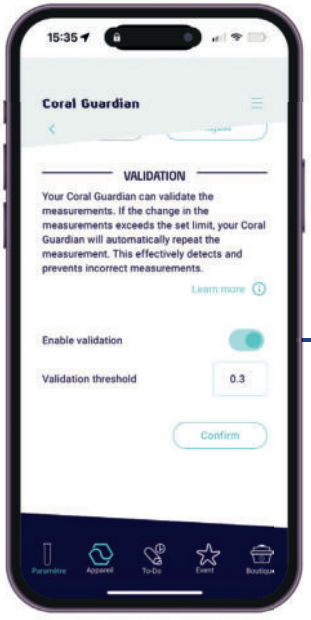
Here you can start intermediate measurements out of sequence. Make sure that no measurement is planned immediately or that a calibration is in progress.



Schedule

Here you can store schedules for the individual parameters. You can use “+Add time” to specify when the respective parameter should be measured. Please note that times already selected can no longer be selected for the other parameters.

You can delete them again by clicking on the cross in the time box. The specified times are the same for all days. You can select days by clicking on them and delete them by clicking on them again.



Validation

Your Korallenwächter can validate the measured values. If the change in the measurements is greater than the set limit value, your Korallenwächter automatically repeats a measurement. This is an effective way of detecting incorrect measurements.

You should adjust the validation value to your daily consumption or current situation (restart, change in supply system, conversion) in order to avoid unnecessary repetitions.

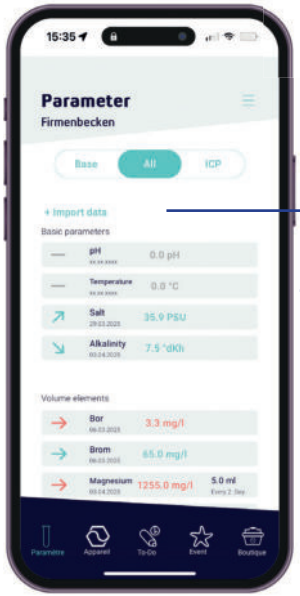
TYPUS - OVERVIEW OF THE WATERQUALITY

OVERVIEW OF ALL WATER QUALITY PARAMETERS

Basic values

Here you can see the six basic values for checking your water quality. You can add values via “+ Add parameter” or delete values by Swipe the tile to the left to delete values from the view.

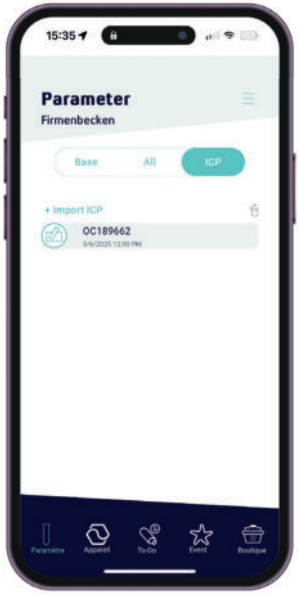
In each tile you can see the last measured value, the date on which the measurement was taken and the trend of the measurement compared to your previous one.



All Values

All values that you can measure via an ICP analysis are listed here. No parameters can be deleted from this view. If you remove parameters from your basic view, they will still be listed here.

You can use “+Import data” to import ICP analyses that have already been carried out by uploading the PDF file with the results. Typus then takes the values from your PDF and enters them.

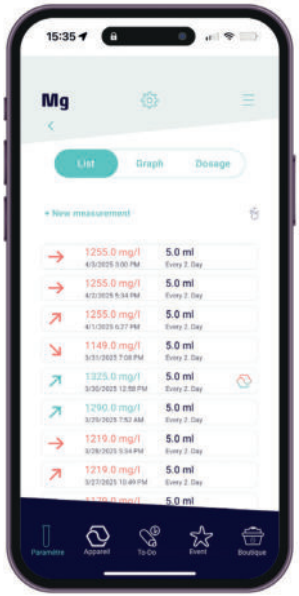


ICP Analysis

All the ICP analyses you have read in are displayed here. If you have accidentally read in an ICP twice, you can delete it here by swiping the tile to the left and all associated measurement results will be automatically deleted in the app.

TYPUS - IN DETAIL

OVERVIEW OF ALL MEASUREMENTS OF A PARAMETER



List View

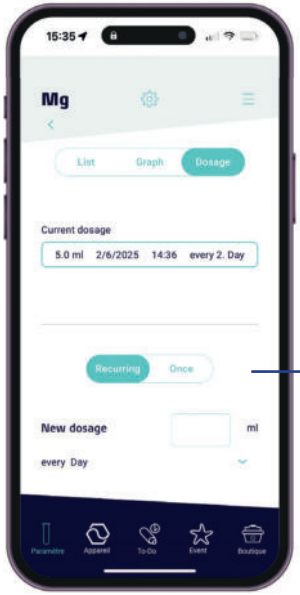
Here you can see all the calcium values measured by the Korallenwächter. If you want to enter a measurement result manually, for example from a manual test kit, you can do this via “+ New measurement”.

By swiping the tiles to the left, you can edit or delete a measured value. If you have measured a value with our water tests or with the Korallenwächter, this will be indicated by our logo.

Graphic view

All measured values are displayed graphically here. The thick dashed green lines are your “green range” within which the value is OK for you. You can edit this range using the gear wheel.

The graph also shows you events that you have documented, such as “filter changed” or “new coral purchased”. This makes it easier for you to understand which care measures have what effect on your water quality.



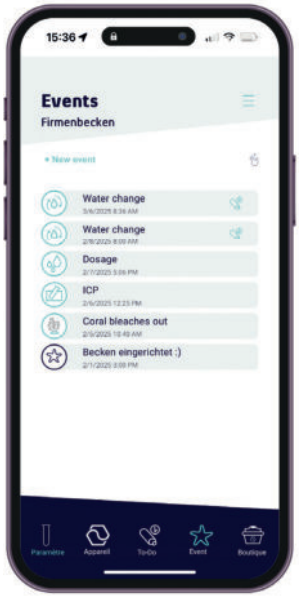
Dosing

Here you can enter how much you dose per parameter, in what quantities, at what time and with what frequency. You can choose between one-off and recurring doses. Your doses are then displayed in your parameter list as soon as you enter a new measured value.

You can also be reminded of doses under To-Do’s in the lower menu if these are doses that are not taken over by your dosing system.

TYPUS – MORE THAN PARAMETERS

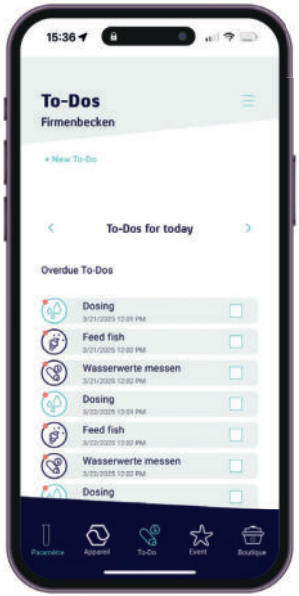
DOCUMENT EVENTS, MANAGE TO-DO'S, INTEGRATE DEVICES



Events

Here you can document so-called events. Events are basically everything you change in your aquarium. Be it maintenance measures or a new stocking. The events are displayed in the graphical views of your parameters. So you can better estimate which maintenance measure has what effect on your water quality and can intervene to regulate it (if necessary).

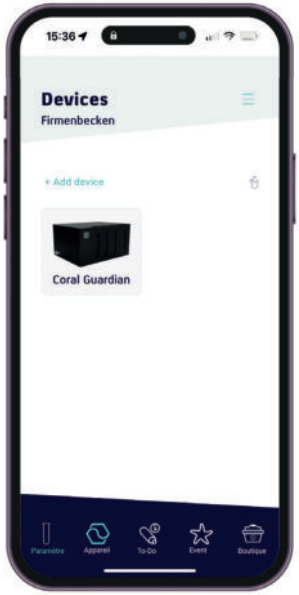
You can document a new event via "+ New event" and delete or edit an existing event by swiping the tile to the left.



To-Do's

Here you can create to-dos to manage your daily tasks relating to your aquarium and be reminded of important to-dos. A distinction is made between to-do's that are due today, those that have been completed and those that are pending.

You can create a new to-do via "+New to-do". You can delete or edit an existing to-do by swiping to the left.



Devices

Here you can see your Korallenwächter that you have included in Typus. This will take you to the settings page for your Korallenwächter.

Via "+Add device" you can add a second Korallenwächter and other devices in the future.

SAFETY INSTRUCTIONS

CHEMICALS

WARNING! Chemicals are used for the measurements which should not get into the aquarium water. Some of the chemicals have a strong staining effect and should not come into contact with sensitive surfaces. Precautionary measures: When changing the hoses, make sure that any residual quantities that escape do not come into contact with the aquarium water. When changing the cartridges, use the attachments supplied to seal the connection points. Ensure that the measuring system is installed correctly.

WARNING! The chemicals used for measurement can be corrosive to metals. Precautionary measures: Always ensure that the connection points of the cartridges are sealed when replacing them. Immediately collect any residue from the hoses to prevent material damage.

WARNING! The chemicals used for measurement can cause damage to health if swallowed. Precautionary measures: Ensure that the container with the residual liquid is kept out of the reach of children and tightly closed before it is disposed of. IF SWALLOWED: Call a POISON CENTER/doctor immediately and give the UFI codes printed on the cartridges.

Disposal: Empty cartridges should only be disposed of when completely empty in accordance with local regulations or returned to Kowalytics UG for refilling.

Storage: Filled, unused cartridges must be kept dry to avoid contamination and absorption of moisture. Recommended storage temperature: 20 °C Protect against: Frost. UV radiation/sunlight. Heat. Moisture.

Further information Magnesium:
P305+P351+P338: “IF IN EYES: Rinse cautiously with water for several minutes. Remove any contact lenses if possible. Continue rinsing.” P337+P313: “If eye irritation persists: Get medical advice/attention.” P501: “Dispose of contents/container in accordance with local/national/international regulations.”

Further information Calcium:
P303+P361+P353: “IF ON SKIN (or hair): Remove all contaminated clothing immediately. Wash skin with water or shower.” P310: “Call a POISON CENTER/doctor immediately.” P305+P351+P338: “IF IN EYES: Rinse cautiously with water for several minutes. Remove any contact lenses if possible. Continue rinsing. “P501: ”Dispose of contents/container in accordance with local/national/international regulations.”

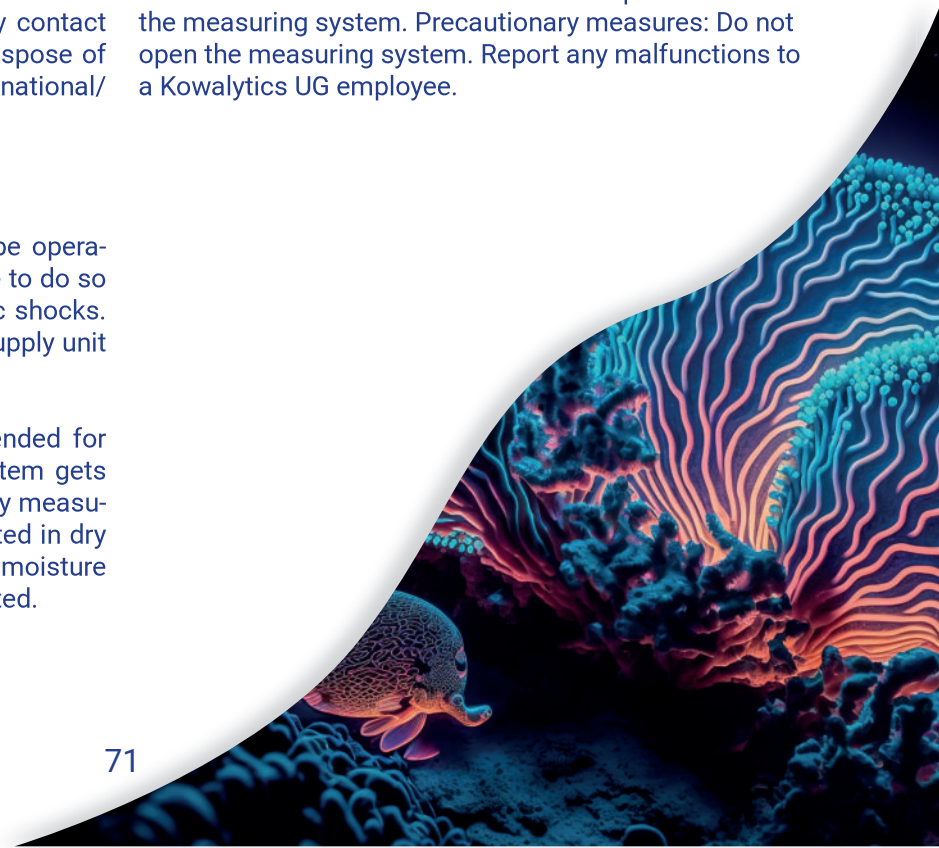
DEVICE

WARNING! The measuring system may only be operated with the power supply unit supplied. Failure to do so may result in damage to the system or electric shocks. Precautionary measures: Only use the power supply unit supplied.

WARNING! The measuring system is not intended for use in damp conditions. If the measuring system gets wet, damage cannot be ruled out. Precautionary measures: The measuring system may only be operated in dry conditions. Protect the measuring system from moisture and ensure that the base cabinet is well ventilated.

CAUTION! The measuring system must not be turned upside down, otherwise damage will occur. Precautionary measures: Do not lay the measuring system on its side or turn it upside down to avoid damage.

CAUTION! There are no user-serviceable parts inside the measuring system. Precautionary measures: Do not open the measuring system. Report any malfunctions to a Kowalytics UG employee.



ERROR MESSAGE & MALFUNCTION

Errors are visualized in two ways, via the status light of the measuring device and via error messages in the app. Below you will find the error messages, what they mean and what you can do about them. If these measures do not help, please contact our support team at: support@korallenwaechter.com

"ALK/CA/MG measurement aborted"
Restarting the Korallenwächter during a measurement

Cause	Action
Coral guard has lost the lost the internet connection	Check your internet connection and restart the measurement

"Measurement fluctuations too high for KH/CA/MG"
ONLY FOR ACTIVATED VALIDATION - The measurement and the repeat measurement deviate too far from each other

Cause	Action
Osmosis water refilled	Start the measurement again at a later time
dosing and measured too close in time to this	Start the measurement again at a later time and increase the value under Validation if necessary
Major change in the aquarium (e.g. supply system changed, conversion, restart)	Increase the value under Validation
The value under Validation does not match daily consumption	Increase the value under Validation according to your consumption
Sample is taken at a strongly fluctuating point in the aquarium	Hang the sample tube around and follow the instructions on p. 11
Water sample or osmosis water is not drawn correctly	Check the hoses for kinks, fill levels and opportunities to draw air
Cartridge empty	Replace the cartridge
Cartridge broken	Check the connections for dents or defects
Chemicals are not drawn correctly	Check that the cartridge is seated correctly and that you have activated it using the code

"Cartridge error for KH/CA/MG"
Chemicals could not be drawn correctly from the cartridge

Cause	Action
Cartridge is empty	Replace the cartridge
Cartridge is broken	Check the connections for dents or defects
Tubes are not filled inside the Korallenwächter	Check that the cartridge is seated correctly and that you have activated it using the code
Longer service life (2 weeks plus)	Check the above points and carry out several measurements

"Measurement not possible for KH/CA/MG"
The evaluation of the measurement was not successful. It was not possible to no color change could be detected.

Cause	Action
Hoses incorrectly connected	Check the connections (aquarium water on the left, osmosis water in the middle, waste water on the right)
Hoses are blocked	Check the hoses for kinks and blockages
Tubes are not filled inside the Korallenwächter	Check that the cartridge is seated correctly and that you have activated it using the code
Cartridge is empty	Replace the cartridge
Cartridge is broken	Check the connections for dents or defects
Cartridge missing	Check whether you have inserted the cartridge and removed the transportation plugs
Korallenwächter damaged	Contact the support team

"KH/CA/MG calibration failed - Measurement fluctuation too high during measurements"
The measurement fluctuations of the 5 calibration measurements are too high

Cause	Action
No osmosis water	Check that there is enough osmosis water and that the end of the hose is completely submerged in water
Too little, no reference	Check whether there is still enough reference left and whether the end of the hose is completely under water.
Cartridge is empty	Replace the cartridge
Cartridge is broken	Check the connections for dents or defects

ERROR MESSAGE & MALFUNCTION

Cartridge missing	Check whether you have inserted the cartridge and removed the transportation plugs

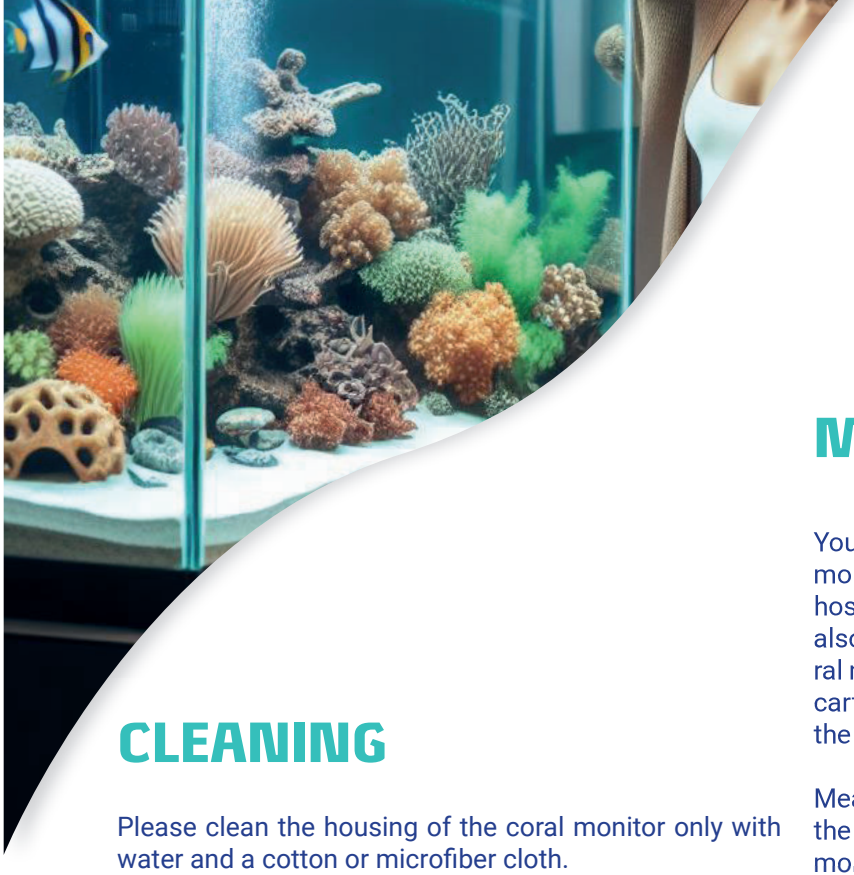
“KH/CA/MG calibration incorrect - control measurement unsuccessful” The control measurement deviates too much from the reference value

Cause	Action
No osmosis water	Check that there is enough osmosis water and that the end of the hose is completely submerged and repeat the calibration
Too little, no reference	Check whether there is still enough reference left and whether the end of the hose is completely under water and repeat the calibration
Cartridge is empty	Replace the cartridge and repeat the calibration

Starfish turns (longer than 30 seconds)
Typus loads the data from the Korallenwächter

Cause	Action
Problems with the Internet connection	Check the internet connection of your smartphone and the Korallenwächter. If necessary, send your Wi-Fi data to the Korallenwächter. Check whether the router is connected to the internet and the Korallenwächter is listed in the router’s user interface.
The Korallenwächter cannot connect to 5gHz networks.	Please make sure that your smartphone is connected to a 2.4 GHz network when you transmit the WLAN data (the currently connected network of the smartphone is transmitted to the Korallenwächter)

In the event of connection problems, it can sometimes help to close the smartphone app completely (in the smartphone’s Task Manager) and reopen it.



CLEANING

Please clean the housing of the coral monitor only with water and a cotton or microfiber cloth.
microfiber cloth. Do not use any cleaning agents as these can damage the material.

MAINTENANCE

You do not have to maintain any parts inside the coral monitor. We recommend replacing the aquarium water hose from time to time and, depending on its condition, also replacing the osmosis or waste water hose. The coral monitor should not be used for long periods without a cartridge in order to avoid contamination or clogging of the connection points.

Measurements should also be taken regularly to prevent the internal hoses from drying out or clogging. The coral monitor should carry out a measurement at least every three months, preferably every month, to avoid these effects. This will ensure that your coral monitor is always ready for use.

WARRANTY CONDITIONS
FOR YOUR KORALLENWÄCHTER

The coral monitor on offer comes with a manufacturer‘s warranty.

Warranty conditions:

The manufacturer Kowalytics UG grants a 1 year (12 months) warranty on the Korallenwächter product. The period for calculating the warranty period begins on the invoice date. The geographical scope of the manufacturer‘s warranty service extends to the Federal Republic of Germany.

If material defects or manufacturing defects occur in the (Early Bird) coral monitor you have purchased during this period, we will provide you with one of the following services of your choice under this guarantee:

- Free repair of the goods or
- Free replacement of the goods with an equivalent item

In the event of a warranty claim, please contact:

Kowalytics UG
Jülicher Straße 209d
52070 Aachen

info@korallenwaechter.com
01793620985

Warranty claims are excluded for damage to the goods due to:

- Normal wear and tear
- Improper or abusive handling
- Non-observance of any safety precautions
- Use of force (e.g. blows)
- Attempted repairs by the user
- Environmental influences (heat, moisture, etc.)

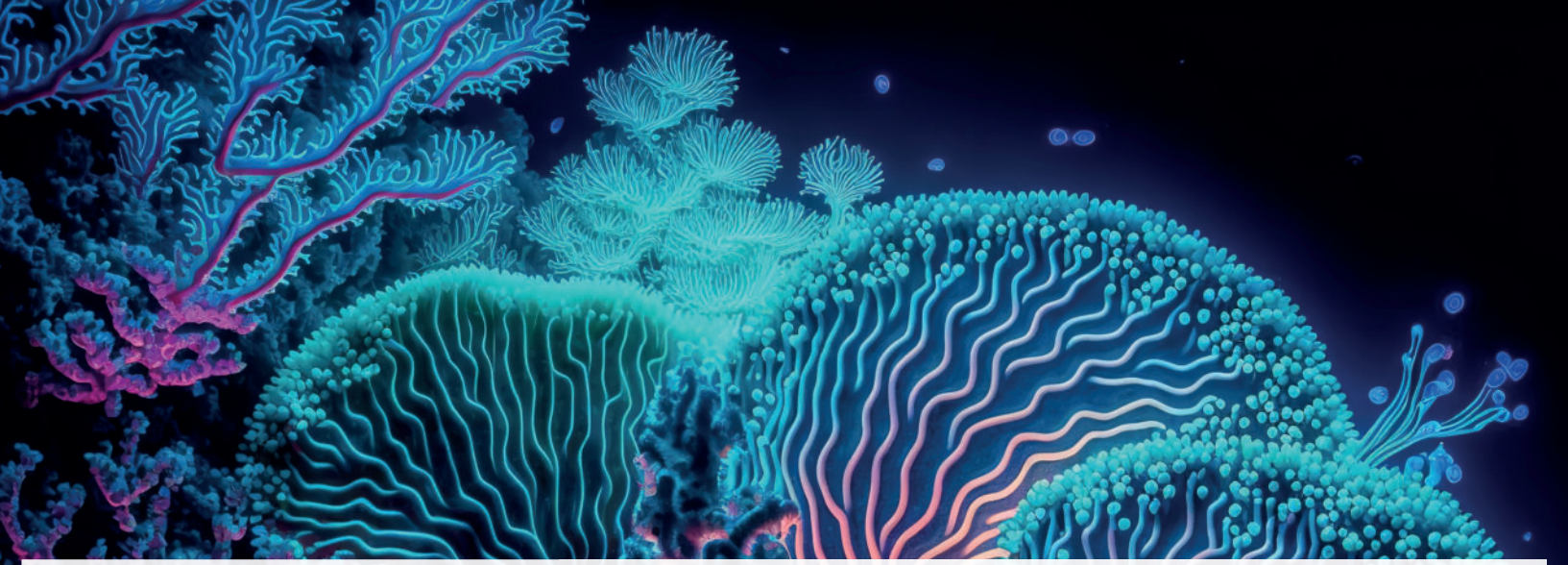
A prerequisite for claiming warranty service is that the guarantor (Kowalytics UG) is enabled to examine the warranty case (e.g. by sending in the goods). Care must be

taken to ensure that damage to the goods during transportation is avoided by using secure packaging. When applying for warranty service, a copy of the invoice for the shipment of goods must be enclosed so that we (the guarantor) can check whether the warranty period has been observed. Without a copy of the invoice, we (the guarantor) may reject the warranty claim. You must also provide the name and address of the seller,
if this information is not available on the copy of the invoice.

In the case of justified warranty claims, the warranty will be processed carriage paid for you in any case, i.e. we (the guarantor) will reimburse any shipping costs for the outward shipment.

Important note: This manufacturer‘s guarantee does not restrict your statutory rights in the event of defects and you can make a claim free of charge. Any existing statutory warranty rights against us therefore remain unaffected by this guarantee promise. This guarantee promise by the manufacturer therefore does not infringe your statutory rights, but rather extends your legal position.

If the purchased item (coral guard) is defective, you can contact us in any case within the framework of the statutory warranty, regardless of whether a warranty case exists or the warranty is claimed.



KORALLEN WÄCHTER

manufactured by
Kowalytics UG
Jülicher Straße 209d
52070 Aachen
info@korallenwaechter.com

Support:
support@korallenwaechter.com

Important note:
You can find an **updated version of the manual** at any time at our store: **shop.korallenwaechter.com**