Red Sea ReefDose Calculator for 4-Part Reef Care Program User Guide

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Introduction

The Calculator simplifies maintaining the correct water parameters when using the 4-Part Reef Care program with the ReefDose.
The dosing calculator performs 2 related but separate functions:
It calculates the manual “adjustment dose” required to bring your calcium and all other elements from their “Current” level to the “Desired” level, assuming that all elements are in balance.
It also calculates the optimal “daily dose” for your system based on the actual calcium uptake of your aquarium.
The calculator’s recommendations can be implemented directly to ReefDose; however, you should consider if the

recommendations are appropriate before implementing them as there are many other factors that can be affecting your water parameters.

Directions for use

When first using the calculator, you need to confirm the volume and type of system as well as defining your reef-keeping goals. The instruction manual provided with the 4-Part Complete Reef Care provides more information about selecting the optimal “Desired” level of calcium and salinity for your specific system.
Before you have any testing and/or dosing history in the logs the calculator provides initial daily dosing recommendations based on an average usage for an aquarium of the volume and aquarium type that you entered when setting up your aquarium in the Reef Beat App. You can edit this information at any time in the aquarium setting page or directly from the “Desired levels” setting page in the calculator.
Run the aquarium for 3 days with the recommended daily dose and then test the calcium level. Do not make a water change during these 3 days and maintain the salinity by constantly topping up RO water lost due to evaporation. Make any necessary adjustment dose to return the water to the desired parameters and update the daily dose as recommended by the calculator and use this dose for a week. Continue testing the calcium on a weekly basis and make additional adjustments and updates to the daily doses as appropriate.

Salinity and normalized calcium readings

Calcium test kits give the measured ppm level of calcium of the sample tested; however, the test result is relative to the salinity of the sample. The dosing calculator compares the calcium levels from 2 individual tests, that may not have been at the same salinity. To enable correct comparison of the readings, the calculator “normalizes” all calcium values by adjusting them to the salinity of the “Desired level” that you have set. (Note: 1 PSU difference in salinity will change the calcium level by approximately 13ppm)

Test log

Measure your salinity and test the Ca level using an accurate test kit (such as Red Sea’s Calcium Pro Test Kit with a resolution of 5 ppm) and enter in the “Ca test log” with the day and time that the sample was taken from the aquarium. If you do not know the salinity, the calculator will assume that it is at the desired level, however, this may affect the reliability of recommended dosages.

Salinity (PSU/ppt) and S.G.

The default salinity unit of the calculator is PSU (practical salinity unit) as this does not vary with temperature and allows for easy comparison between 2 different measurements. If you are more familiar with specific gravity (S.G) for salinity the calculator requires the temperature of the sample in order to calculate the PSU. For accuracy, this should be the temperature of the sample at the time of measurement, however, the temperature of the aquarium should be a close enough approximation.

Calcium and Salinity levels

Desired – The calcium and salinity values that you wish to have according to the specific goals for your system. Ideally, these should be the values of new saltwater used for water changes.
Current – This refers to the most recent entry in the test log.
Previous – This refers to an older entry in the test log.
By default, the calculator takes the most recent entry in the log as the “Current” value and the one immediately before that as the “Previous” value. You can select different entries from the log for both the Current and Previous values, the date of the “Current” must be more recent than that of the “Previous”.
However, there must be at least 24 hours between the selected entries.

Calculating the daily dose

The calcium uptake of your aquarium will change over time as you add or remove livestock or as the corals grow. The calculator determines the actual calcium uptake of your system per day based on the difference between the normalized calcium levels of the selected “Current” and “Previous” calcium tests and the volume of Part#1 dosed by the ReefDose between the exact times recorded for each of the tests.
Using the calculator on a weekly basis will enable you to adjust the dosing according to the actual uptake, optimizing the dosing for your specific system.
If you are making regular water changes, it is best to do the calcium test before the water changes.
Make sure that the “Current” and “Previous” sections on the screen show the relevant data before calculating the “Daily dose”.
Note: The calculator sums all the doses completed by the doser to the nearest minute. The Dosing log in the App presents the total volume dosed per hour, so there may be a difference between the log and the total dosed according to the calculator.

Calculating the Adjustment dose

The calculator compares the “Current” calcium level with the “Desired” level that you have set and recommends an appropriate adjustment.
Make sure that “Desired”, “Current” and “Previous” sections on the screen show the relevant data before calculating the “Adjustment dose”.
In a well-balanced mature system, the “Adjustment dose” should be relatively small and may reflect the accuracy of the test kits rather than an absolute requirement.
Significant differences between “Current” and “Desired” levels are identified by the calculator with pop-up messages, however, the recommendations need to be implemented manually.
If your “Current” calcium level is higher than the “Desired” the calculator will advise switching off the daily dosing for a number of days to allow the natural calcium uptake of your aquarium to reduce it to the desired level. If the difference is larger than can be achieved in 3 days the recommendation is to stop dosing for 3 days, retest and recalculate.
If the “Current” level is more than 20ppm lower than the desired level, you should spread the adjustment dose over a few days to prevent stressing the corals.
If significant differences are happening often, you should check things that affect your water parameters such as the setting of your Daily dose, ATO functionality, skimmer pulling out too much wet waste, parameters of water used for water changes, accuracy of your calcium test kit, etc.

Alkalinity

When using the 4-Part Reef Care program in a balanced system the alkalinity will remain stable with the recommended proportional dose according to the calcium measurements and therefore the dosing calculator does not include alkalinity logs or adjustment recommendations.
It is recommended to test the KH/Alkalinity every 2 – 3 weeks to ensure that everything remains in balance. If the variance is more than 0.5dKH make an adjustment dose of Part #2.
To calculate the adjustment dose of Part#2; 1ml of Part #2 will raise the KH level of 100 liters / 25 gal by 0.1dKH (0.036 meq/l).

Documents / Resources

	**Red Sea ReefDose Calculator for 4-Part Reef Care Program** [pdf] User Guide ReefDose Calculator for 4-Part Reef Care Program, ReefDose Calculator, Calculator for 4-Part Reef Care Program, ReefDose, Calculator, 4-Part Reef Care Program, 4-Part Reef Care, Reef Care Program

References

- **User Manual**