

NEWS OF IT

FAUNA MARIN

PO₄ Heat Test by C. Schuhmacher

Easy-to-follow method for finding the amount of
PO₄ deposits present in reef aquariums





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Over 20 years ago, **Fauna Marin** developed a method that would help aquarists **gain a better understanding of their aquarium's total phosphate content**. Since 1995, Fauna Marin has performed over **20,000 PO₄ heat tests**. With a better understanding of the PO₄ depot activity, aquarists today can make **more calculated adjustments to their current maintenance routine**.

When it comes to Phosphate (PO₄) and Phosphorus (P) in the aquarium, one must first understand that **PO₄ and P are not only stored within the water column**. PO₄, P, minerals, and **nutrients can be absorbed by decorative rock and substrate surfaces**. It can even have an impact on everyday chemical-physical processes of the aquarium. More importantly, these compounds can also get absorbed by trace elements and organic compounds.

The purpose of the PO₄ Heat Test is to help aquarists gain a better understanding of the amount of deposits trapped inside calciferous surfaces. By using this method, aquarists can see the depot factor of their aquarium and **take action sooner to prevent an over-accumulation of surface-bound P and PO₄**.

Commercial PO₄ test kits can only measure one part of phosphate - Orthophosphate (PO₄³⁻).

Modern laboratory test systems such as ICP systems, measure the total Phosphorus (P) content of water. Given that commercial test kits only test for Orthophosphate, these results only give aquarists a partial understanding of their aquarium's total (P) content. In rare cases, both values of total Phosphorus and Orthophosphate are the same. For this reason, when aquarists test with commercial test kits, their results may differ greatly from a laboratory analysis.

When interpreting the test results from your commercial kit and a laboratory analysis, you can see how much of a difference there is between each result. **This information helps aquarists understand how much their test kits are not measuring**.



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The PO₄ heat test is a unique testing method that can be used alongside any commercial PO₄ test kit. This method requires no additional tools and can be performed at home.

In order to proceed, you will need a commercial PO₄ test kit.

We recommend testing with our Fauna Marin PO₄ Test kit. Please do the following:

- Take a **0.2L (200ml)** sample of aquarium water; use a glass cup.
- Place the sample in the microwave and **heat the water to near-boiling temperatures** (94 - 96°C or 201 - 204°F), then **wait 4 minutes for water to cool**.
- **Take a water sample from this glass cup**, then let it cool to room temperature.
- **Perform your PO₄ test using this room temperature water sample and compare your results with the standard test method.**

Example:

Result w/ **heat test** (0.08) ÷ Result w/ **standard test** (0.04) = **Depot factor** (of 2)

EXPLANATION OF THE DEPOT FACTOR

DEPOT FACTOR OF 1 – 1.75

→ The aquarium has **little to no PO₄ deposits** stored in the water.

DEPOT FACTOR OF 1.8 – 2.2

→ **Elevated PO₄ deposits are present.** We recommend slowly changing your substrate **with natural coral sand** and also adding activated carbon such as **Carb L**. If necessary, reduce PO₄ with **Phos 0,04**, **Ultra Phos**, or **Power Phos**.

DEPOT FACTOR ABOVE 2.2

→ At these levels, aquariums typically start having **cyano problems** and issues with **undesirable algae**. We recommend our **SRL Business Test** service for thorough analysis of your water quality.



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The outcome of the calculated depot factor does not mean that this value will always stay the same. Through the everyday processes of the aquarium, there will always be something adding to the accumulation of deposits. Instead of focusing on getting the depot factor as low as possible, we recommend maintaining a **stable depot factor between 1 – 1.75**.

With **regular PO₄ tests and the heat test method**, you can gain a better understanding of how much PO₄ deposits the aquarium usually holds.

If you have a high depot factor, please **contact us for further advice**. We know the composition of aquarium deposits and have the necessary experience to give you the appropriate advice for your aquarium.

For further information or individual advice, please contact us directly on our Support forum:

<http://forum.faunamarin.de>

For more information on corals and our products, please visit our website:

www.faunamarin.de

Manuals and HTU guides can be found in our Download Center:

<https://www.faunamarin.de/download-center/>

Wishing you much success!

Fauna Marin GmbH