Lanthanum Chloride Dosing
For the Removal of PO4 in Reef Aquaria

Here are the items you will need, and instructions for how to safely dose Lanthanum Chloride to your tank.

First, you must have a low range test kit such as the Hanna H1736 ULR checker.
The reason is that it is not safe to dose LC once PO4 gets below about 0.05 ppm. As long as you're sure you are above that, you will be fine.

List of items needed:

1. Gravity feeding bag, this can be found online by Google searching for “gravity feeding bag”. The one below is what I used.



2. Seaklear commercial phosphate remover, picture below.



3. 10 micron felt filter socks. These are used in all sorts of industrial applications – I found them on Ebay.



4x Filter Sock 7" Ring x 16 .5" 10 Micron Felt Polypropylene Quality Made in USA

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Once you have these materials you can begin the process of LC treatment. (If you skip any of these steps, or deviate from this process exactly, I cannot be held responsible for the outcome. Please follow the instructions closely, and don't take shortcuts).

The LC must be diluted with RODI water before dosing to your tank. The dilution that I have used from the start, and continue to use today is - 2ml SeaKlear to 1L RODI water – per 100 gallons tank volume. So for my system, which is about 400 gallons, I add 8ml SeaKlear to 1L of RODI and mix well in the feeding bag. The solution is then dripped very slowly into the overflow (see pictures) so there is a large volume of water for the LC to react with. This drip rate should be about 1 drop per second. This will take about 3-4 hours to completely empty the bag.



Here you can see the dripper is in place directly above the overflow, and the bag is suspended above that.

You must have a 10 micron filter sock in place under your drain that will catch the entire volume of water that is going down your drains. The filter sock is there to capture the particulate that results from the LC reacting with the PO4 in your system. Do not allow any LC to enter the water column that does not go into the sock. The reason for this is that it could be harmful to your tank inhabitants, and could also end up binding to rock and substrate.

You will drip this solution for several hours, don't try to rush the process or you will end up with a cloudy white tank. If you see any clouding, discontinue the drip until it clears, and leave the filter sock in place the whole time. You should also leave the filter sock in place for several hours after treatment to be sure you get all of the precipitate, and all of the LC has reacted.

You will also need to keep an eye on your ALK as LC tends to lower it a bit, this has never been an issue for me though, and the change was very small in my system. Be aware though that you need to check ALK before and after to be on the safe side. (Remember the goal is to remove PO4 without upsetting anything).

Do this treatment once a week until PO4 remains at your target level. One thing to consider is that the PO4 will leach back out of your rock slowly after treatment. This is due to the concentration of the water being now lower that the PO4 in the rock and it will tend to equalize between the two. So, you will need to treat weekly until no more leaching is occurring.

There is a lot of information on this subject online at Reef2Reef and Reef Central, so please read up if there is something you're not comfortable with. I also want to give credit to Gary Majchrzak as he is (to my knowledge) the originator of the information here.

Happy Reefing,

TMB