



## **Calcium Magnesium Mineral Supplement**

### **Introduction**

This supplement can be added to any Reverse Osmosis water. The goal is to add calcium and magnesium to the RO water making it healthier to drink. It will also increase the pH level which is also good. The Safe Drinking Water Foundation has been part of developing calcium and magnesium additions to municipal water treatment plants that use RO water and here we aim to get similar benefits with small RO units. You will use a Total Dissolved Solids (TDS) meter to determine how much calcium and magnesium you are adding to the water. The goal is to increase the TDS level around 25 mg/L above the TDS level in the RO water. How to do this is described below.

### **Measure TDS**

First, to use your TDS meter, take the bottom plastic cap off. Then use a glass which you will fill with water. To measure TDS you need to insert the meter and have at least enough water in the glass to where the cap reaches. Put the TDS meter into the water and slowly stir it around, the reading will change and then become stable. Don't worry if it is not entirely stable, say at 25, but varies between 24 and 26, just note down the number that it is mostly at.

### **Testing the RO unit**

It is good to do this test say once every month. First you should test your tap water where you have installed your RO. Say, this gives you a TDS reading of 154, note that down. Then measure the TDS in the RO water. To get a good reading drain the tank of the RO unit, you know when you have drained it because you will then only get a trickle of water. Rinse the TDS meter first, collect a sample of the RO water and measure this. Note this down. If you see that the RO water TDS is drastically increasing, say you originally had a TDS of 5 mg/L (all readings are in mg/L) and then you get a reading of 50, it would be time to change the RO membrane, but this should take more than a year in normal use. You are likely going to see a slow increase in TDS with time and this is a normal aging of the membrane and it is the larger increases and over shorter periods of time that indicate membrane filter should be changed.

## **Adding calcium and magnesium to your RO water**

You need to add the mineral supplement in sufficient quantity to increase the TDS of the RO water by 20 to 30 after 24 hours with the mineral supplement in the water. For example, if your RO water has a TDS of 4 then you want it to reach between 24 and 34. If your RO water has a TDS of 50 then you want the TDS to reach between 70 and 80 with the mineral supplement added.

It is recommended that you add up to 1 cup of mineral supplement and then fill a 2 litre jug with RO water, and let stand for at least 12 hours (overnight is ideal). Then pour some water into a glass and monitor your TDS level. Don't worry if your TDS level increases by more than 20 – 30, just dilute the water accordingly. If you have not managed to increase the TDS by 20 to 30 try stirring the water in the jug and retest the TDS, the water will appear cloudy but is still perfectly safe to drink. Keep measuring the TDS over the next 12 – 24 hours until you will find the ultimate reading. It will take a few days practice to find the right quantity and timing for your RO water to supply your family requirements.

Leave your jug of mineralized water on the counter or in the fridge whichever you prefer. The mineral supplement can be reused over and over again, just pour more water over it. You will find that your water jug takes on a calcium deposit, this is harmless.

In order to consume the recommended daily requirement of Calcium and Magnesium via the mineralized RO water you would have to drink at least 4 litres of the mineralized water each day. The calcium in this mineral supplement is a calcium carbonate not calcium citrate. More information about RO units can be found on our website at [www.safewater.org](http://www.safewater.org). If you have further questions about the mineral supplement or your RO unit please email [scientist@safewater.org](mailto:scientist@safewater.org)