Water Specifications for Enapter AEM Electrolysers

Good water quality is crucial to reducing maintenance frequency and costs while assuring consistent performance of the system.

Therefore, together with the requirements made to comply with ASTM standards, Enapter has set additional minimum purity requirements in order to apply best practices to ensure the longevity of the electrolyser. We recommend you use Type IV or lower, and as noted in the table below, you'll see the additional requirements set by Enapter

Measurement (Unit)	**Type I**	**Type II**	**Type III**	**Type IV**	**Previous Enapter Requirement**
Conductivity (µS/cm)	<0.056	<1	<.025	<5	<20
Resistivity (MΩ-cm)	>18	>1	>4	>0.2 (200KΩ)	-
Total Organic Carbon (TOC) ppb or µg/L	<50	<50	<200	<1000*	-
Sodium (ppb or µg/L)	<1	<5	<10	<50	-
Chloride (ppb or µg/L)	<1	<5	<10	<50	-
Silica (ppb or µg/L)	<3	<3	<500	<500*	-
Acidity (meq/l)	<0.1*	<0.1*	<0.1*	<0.1*	-

**Not part of ASTM D1193-06 Standards but required by Enapter devices.*

Standards used from ASTM:

- ASTM D1193-06 (water types)
- ASTM D1067 (acidity)

Warranties for AEM Electrolysers can be void for not adhering to the minimum input water purity requirements, which makes monitoring essential.

Recommendations for monitoring water purity:

- Intermittent testing of water sample
    - Plan your system's routine maintenance and regularly refresh the electrolyte in your hydrogen generators when necessary
    - Regularly test your input water to check its CO2 levels – this can be performed using inexpensive and readily-available titration kits. Our acidity requirement corresponds to a maximum level of 2 mg CO2/L
    - We recommend that a sample is taken from the water input at every major maintenance cycle on site
- For smaller systems, we recommend using two resin filters in series and placing a conductivity sensor between to monitor your water conductivity at all times

    - When conductivity surpasses 5 µS/cm, swap the cartridge positions and regenerate/refill the spent resin cartridge
    - Ensure that your maintenance plans include regularly checking/calibrating your conductivity sensors to make sure they are giving accurate readings
- For larger systems, a recirculating WPS may be the most economical choice and we recommend that integrators carefully plan their maintenance cycles and costs while sizing their WPS.

- Make sure to always follow the routine maintenance instructions found in the Owner's Manual of your device.

It's important that you ensure your water provided to our electrolysers follows the above recommendations. Using out-of-specification water can damage the system and result in unforeseen effects on the stack performance and lifetime.