

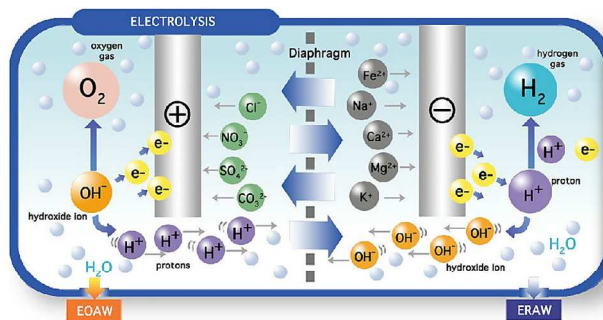
# EHC – Water Electrolysis Stack

offers a full-scale water electrolysis stack using a solid electrolyte membrane.

Hydrogen and oxygen can be easily generated simply by supplying pure water and electricity. By supplying electricity obtained from natural energy sources such as solar cells and wind power, hydrogen can be produced, which can then be used as needed to create a CO<sub>2</sub>-free power generation cycle.

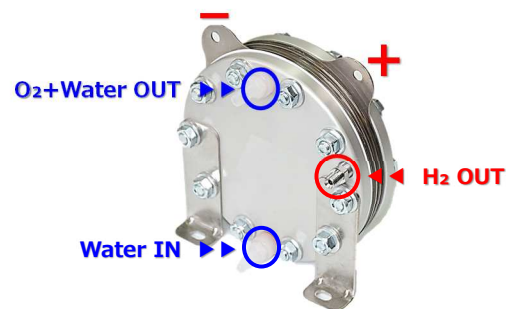
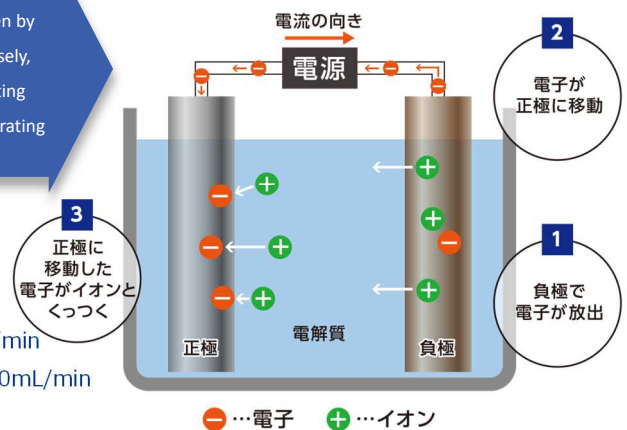
Water electrolysis stacks can meet detailed output requirements by adjusting the number of cells, so they can easily be incorporated into your system. Please feel free to contact us.

In the electrolyte, water is separated into hydrogen and hydroxide ions.	$2\text{H}_2\text{O} \Rightarrow 2\text{H}^+ + 2\text{OH}^-$
When voltage is applied to electrodes placed in this electrolyte solution, the cathode (-) gives electrons to the hydrogen ions, causing a reduction that produces hydrogen	$2\text{H}^+ + 2\text{e}^- \Rightarrow \text{H}_2 \uparrow$
At the anode (+), electrons are taken from the hydroxide ion, oxidation occurs, and oxygen and water are produced	$2\text{OH}^- \Rightarrow \text{H}_2\text{O} + 1/2\text{O}_2 \uparrow + 2\text{e}^-$



This way, in water electrolysis, water is split into hydrogen and oxygen by applying a voltage to it. Conversely, fuel cells do the opposite, reacting hydrogen and oxygen and generating electricity in the process.

## 電池の基本的な仕組み



### ◆Hydrogen Production Rate

- Small Stack : 70 ~ 240mL/min
- Medium Stack : 300 ~ 1000mL/min
- Large Stack : 1L/min ~

◆The amount of hydrogen produced can be controlled by varying the supply voltage and controlling the current.

◆Large scale stacks that can handle higher flow rates than those mentioned above are also available. Please contact us for more information.

**Warning :** Be sure to use pure water with an electrical conductivity of 1 μS/cm or less as the supply water.

Type	Small		Medium			Large		
Model Number	EHC-070	EHC-240	EHC-300	EHC-500	EHC-1000	EHSC-H0.3	EHSC-H1	EHSC-H6
Hydrogen Production Rate (NPLM)	0.06	0.24	0.30	0.50	1.00	5	16.6	100
Operating Pressure (Mpa.G)	≤0.8			<1.0				
Operating Voltage DC (V)	2±10%	8±10%	2±10%	4±10%	8±10%	12±10%	40±10%	72±10%
Operating Current (A)	10	9	45	36	36	120	120	400
Cell Number (Pcs)	1	4	1	2	4	6	20	36
Dimensions (mm)	90 x 70 x 93	90 x 102 x 93	138 x 68 x 150	138 x 72 x 150	138 x 80 x 150	298 x 184 x 276	298 x 184 x 298	445 x 445 x 536
Endplate Dimensions (mm)	Φ90		Φ138			Φ175 (184 x 184)		Φ330 (340 x 340)
Room Temperature	1~40℃ (Keep away from freezing)							
Joint Specification	Pure Water (IN) & O <sub>2</sub> ·Water (OUT) : OD8×ID4 (Barb fitting) 、H <sub>2</sub> (OUT) : Φ3					Available upon request		
Weight (kg)	0.62	0.85	1.5	1.7	2.1	17.2	22.1	106

**Warning :** Design and specifications can change without prior notice

Please note that the technical specifications for this device, as provided by the manufacturer in Japan, may differ depending on the country in which you plan to use the device. Please consult the relevant documentation or seek expert advice if you have any concerns or questions about using this device in a particular location.