



E-C_{ELL}

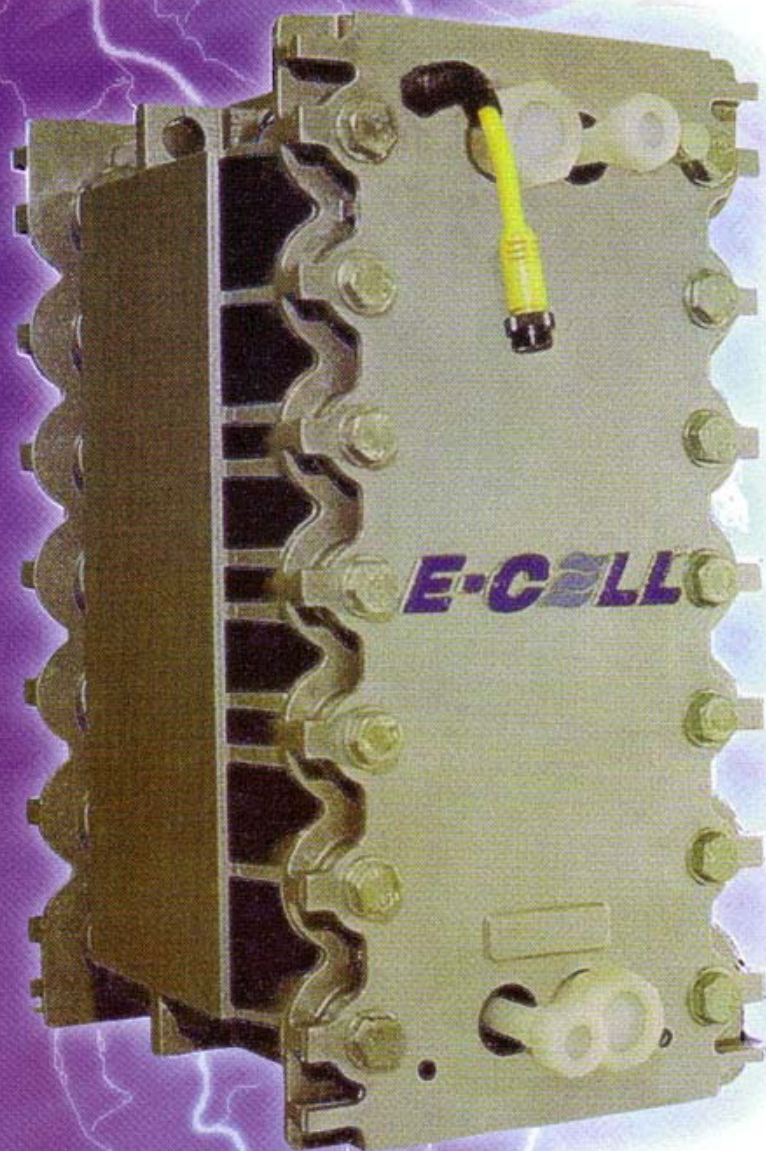
EDI Unit
ElectroDelonization Unit



GOSHU KOHSAN CO., LTD.
www.goshu.co.th

ElectroDeionization Unit (EDI Unit)

"Chemical-Free Deionizer for Ultrapure Water Production"



Introduction

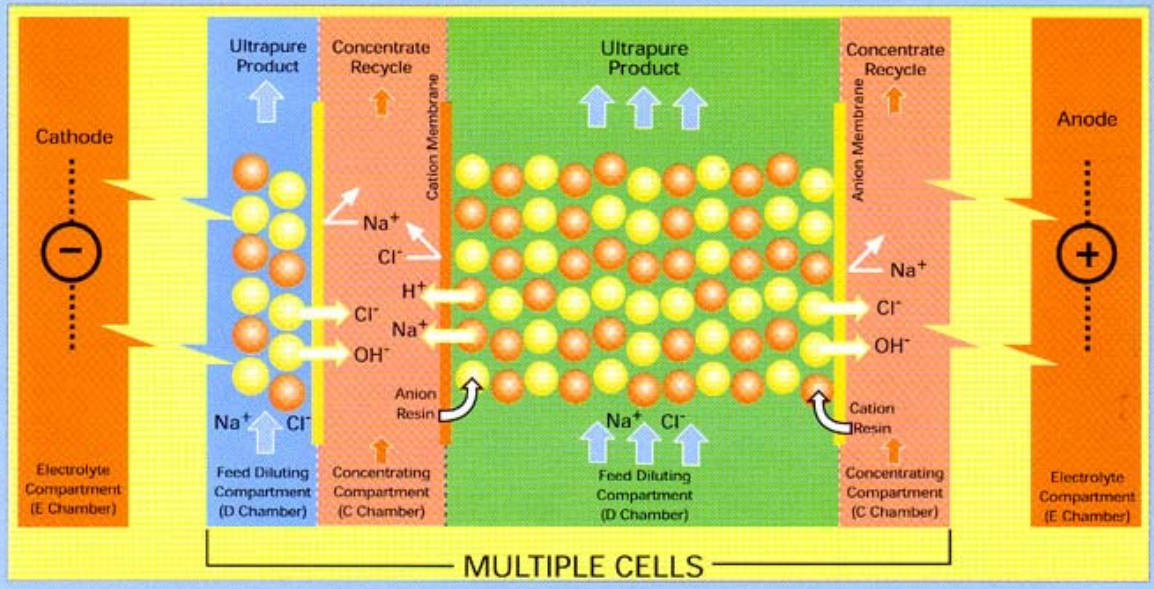
E-CELL is a revolution in electrodeionization technology, which produces ultrapure water. This innovative technology was developed by Asahi Glass Co., Ltd. and E-CELL Corporation, and it meets the prevailing market need for chemical-free, cost-competitive replacement for primary mixed-bed deionization. E-CELL presents excellent operating performance. It is environmentally friendly and eliminates the operating cost for chemical regeneration.

Specification of E-CELL Stack

Type	MK-1E	MK-1Mini
Product Flow Rate	1.5-2.8 m ³ /Hr	0.7-1.0 m ³ /Hr
Supplied DC Voltage	<DC 600 V	<DC 500 V
Supplied DC Ampere	<4 A / stack	<2 A / stack
Dimension	300 mmW x 425 mmD x 610 mmH	300 mmW x 240 mmD x 610 mmH
Weight : Empty	80 Kg	52 Kg
Operating	90 Kg	56 Kg

Principle of EDI

The EDI process deionizes water in a unique and efficient manner. Ions in feed water are removed by the ion exchange resins and membranes containing within the system and transferred into a waste stream by an electric current. High performance desalination can be carried out, because ion exchange resins in diluting compartment are kept regenerating with H^+ and OH^- generated by water splitting.



Features of EDI Unit

- High desalination performance
- High recovery rate of feed water
- Realization of low price due to miniaturization, perfect standardization and mass production
- Easy to scale up design with rack system in which several E-CELL stacks are mounted
- Smaller space than the mix-bed system
- No requirement for chemical regeneration process
- Easy for operation and maintenance procedures



Specification of EDI Unit

Model	Capacity (m ³ /Hr)	Power Consumption (kW)	Electric Source	Dimension W x D x H (mm)	Weight (Kgs)
ED-10	1.0	3.0	3 ∅, 380 V	980 x 775 x 1800	700
ED-25	2.5	7.0	3 ∅, 380 V	980 x 1000 x 1800	750
ED-50	5.0	11.0	3 ∅, 380 V	2400 x 1400 x 1900	1600
ED-75	7.5	15.0	3 ∅, 380 V	2700 x 1450 x 1900	2000
ED-100	10.0	21.0	3 ∅, 380 V	2700 x 1450 x 1900	2100

*Wide range of products besides above items are available.

*All designs and specifications will be subject to change with or without notice.

Applications for Ultrapure Water Production

1. Electric Power and Steam Plant
2. Nuclear Power Plant
3. Manufacture of Semiconductor
4. Manufacture of Television Picture Tube
5. Pharmaceutical Plant
6. Research-Laboratory
7. Others

Comparison of EDI and Conventional Deionization

Conventional DI	EDI	
Mixed Bed System	Conventional EDI System	E-CELL System
= Low cost	= Continuous regeneration	= Continuous regeneration
= Wide variety of system scale	= No reagent	= No reagent
= Batch regeneration	= Small setting area	= Small setting area
= Use of reagent	= High cost	= Low cost
= Large setting area	= Small system only	= Wide variety of system scale

Specification of Inlet Feed and Product Water

Inlet Feed

Parameter Item	Unit	Recommended Value
Conductivity	$\mu\text{S/cm}$	< 40
pH	-	4 - 9
Total Hardness	ppm as CaCO_3	< 0.03
Silica	ppm as SiO_2	< 0.5
TOC	ppm	< 0.5
CO_2	ppm as CO_2	< 1.0
Free Chlorine	ppm	< 0.05
Fe, Mn, H_2S	ppm	< 0.01
SDI (15 min)		< 3
Oil		Not detectable
Turbidity	NTU	< 1.0

Product Water

Parameter Item	Unit	Expected Value
Resistivity	$\text{M}\Omega\cdot\text{cm}$	≥ 15
Recovery	%	≤ 95



Precaution for Safety

When you use E-CELL, be sure to keep precautions described in an instruction manual attached to the stack.

For further information, please contact:

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