

E-Cell EDI Stacks

Electrodeionization Systems

Continuous Chemical-Free High-Purity Water — Replacing Mixed-Bed Ion Exchange

SECTION 1 — OVERVIEW

Electrodeionization (EDI) is a continuous, chemical-free process that removes ionizable species from reverse osmosis (RO) permeate. It combines ion-exchange membranes, mixed-bed ion-exchange resin, and a direct current (DC) electrical potential to achieve high-purity water without the need for acid or caustic regeneration. EDI replaces conventional mixed-bed ion exchange, eliminating batch downtime, chemical handling, and waste neutralization. The E-Cell MK-3 series, distributed by Purecowater (purecowater.com), is a third-generation EDI stack designed for reliable, low-maintenance operation. Key specifications include a nominal flow rate of 2.3 to 4.5 m³/h per stack, a feed water conductivity requirement of less than 40 μ S/cm (typically from RO), and a silica removal efficiency of over 99%. The MK-3 operates at a DC voltage of 0-300 V and a current of 0-6 A per stack. The number one cause of field failures in EDI systems is carbon dioxide (CO₂) in the feed water, which forms bicarbonate and carbonate ions that can precipitate as calcium or magnesium salts on the membrane surfaces, leading to scaling and performance degradation. Components of the E-Cell MK-3 stack include cation-permeable membranes, anion-permeable membranes, mixed-bed ion-exchange resin beads, polypropylene spacers, and titanium electrodes. The stack is designed for easy maintenance with replaceable modules.

SECTION 2 — APPLICATIONS

- Power generation (boiler feed water, steam cycle makeup)
- Pharmaceuticals (USP purified water, WFI pretreatment)
- Semiconductors (ultrapure water for wafer rinsing)
- Electronics (high-purity water for circuit board manufacturing)
- Surface finishing (deionized water for plating and coating)
- Automotive (battery production, coolant mixing)
- General industrial high-purity water (laboratory, chemical blending)

REQUEST A QUOTE

Purecowater

*Your Next Industrial Filtration Project
Made Simple.*

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WEBSITE

www.purecowater.com

Peachtree City, GA

BRANDS WE DISTRIBUTE

- Veolia / SUEZ
- Tonkaflo Pumps
- ErtelAlsop
- LG Membranes
- Fil-trek
- WTS
- Engineered Solutions

20+ years of industrial filtration expertise. Contact us for pricing, sizing & availability.

Product Specifications

Manufacturer	Veolia / SUEZ (E-Cell brand)
Technology	Electrodeionization (EDI / CEDI)
Series	E-Cell MK-3 and MK-3Pharm
Operation	Continuous — no regeneration chemicals
Feed Requirement	Pre-treated RO permeate, low CO ₂
Replaces	Mixed-bed ion exchange
Industries	Power, pharma, semiconductor, industrial
Distributor	Purecowater — info@purecowater.com

Contact Purecowater to Order

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Pricing, availability, sizing assistance, and replacement parts. 20+ years industrial filtration experience.

Purecowater is an authorized distributor and OEM for Veolia/SUEZ, Tonkaflo (Pentair), ErtelAlsop, LG Membranes, Fil-trek, WTS, and Engineered Solutions. Specifications subject to change. Contact Purecowater for current pricing and availability.