

Sodium Hypochlorite Electrolytic Cell

The sodium hypochlorite electrolytic cell is the core reaction unit for on-site generation of sodium hypochlorite disinfectant, typically employing an undivided (membrane-free) structure. The cell body is commonly fabricated from UPVC or PVDF engineering plastics, offering excellent resistance to strong alkalis and hypochlorous acid corrosion. Inside, the anode features a titanium-based Mixed Metal Oxide (MMO) coated electrode, providing high chlorine evolution activity and a service life of 5–8 years, while the cathode consists of pure titanium plates. During operation, a 3%–5% dilute brine solution is fed into the cell for electrolysis, producing a sodium hypochlorite solution with an available chlorine concentration of 8–10 g/L. Byproduct hydrogen gas is forcibly vented through the top outlet. Structurally, cells are categorized into tubular types—compact and suitable for low-to-medium chlorine output—and plate types, which offer modular parallel configuration ideal for large-scale water treatment plants. Characterized by a current efficiency $\geq 60\%$ and salt consumption ≤ 6.0 kg per kg of available chlorine, these systems are widely used in municipal water supply, hospital wastewater treatment, and swimming pool disinfection.



KEY FEATURES

1. High electrolysis efficiency with lower energy consumption
2. Ultra-long service life, repairable and reusable
3. Stable chlorine output for consistent disinfection performance
4. Excellent corrosion resistance against sodium hypochlorite medium
5. Visualized operation for convenient maintenance

PRODUCT SPECIFICATIONS

Electrode Material

Anode: Titanium substrate coated with Ru-Ir noble metal oxide

Cathode: Pure TA2 titanium

Current Efficiency: $\geq 80\%$

Service Life: Coating ≥ 5 years (repairable); Titanium base ≥ 15 years

Cell Housing: Transparent PMMA acrylic, corrosion resistant to sodium hypochlorite brine

Working Pressure: 0.1–0.3 MPa

Brine Concentration: 3%–5% NaCl

Available Chlorine Output: 100–10000 g/h (customizable)

Produced Disinfectant Concentration: 6000–10000 ppm

Operating Temp: 20–40°C

Power Consumption: ≤ 3.8 kWh per kg available chlorine