

gaffey

WATER TREATMENT FOR LIFE

+ Hyprolyser®

ART ADAPTIVE
RESPONSE
TECHNOLOGY

+ Hyprolyser® iSEC® -3 Modular

Safe, reliable & efficient on-site generation of sodium hypochlorite

State-of-the-ART disinfection systems

Hyprolyser® iSEC® electrochlorination systems provide an on-demand supply of **0.6% sodium hypochlorite solution**. Using **harmless salt, water and electricity**, the sodium hypochlorite is generated through the electrolysis of the diluted brine solution.

Hyprolyser® iSEC® is flexible and versatile, adapting to the unique needs of various sectors and applications, including municipal water treatment, water parks, aquatic centres and industrial disinfection.

The ART of iSEC®

Our latest generation of Hyprolyser® iSEC® systems give you even more. Our unique, state-of-the-art Adaptive Response Technology allows the system to adjust to changing environmental and site conditions, ensuring continued efficient and effective chemical generation.

Using the Adaptive Response Technology, the Hyprolyser® unit can detect the smallest irregularity within its process. Rather than immediately stopping chemical generation,

it will automatically maintain production whilst displaying the relevant warning annotation.

This enables the operator to easily identify and resolve any issues without interrupting operation, avoiding nuisance and costly shutdowns.

However, if the parameters exceed alarm limits and the capacity cannot be reduced further, the Hyprolyser® enters an alarm state and safely stops generation – ensuring operator peace of mind and additional safety.



State-of-the-ART chlorination.

Delivering maximum efficiency for municipal, industrial and commercial applications.



Key Benefits



Hydrogen safety

- No external zones: dual containment for electrolyser and degassing column forced air ventilated <1% LEL (Lower Explosive Limit).
- Volumetric air dilution flow monitoring Low Alarm shutdown.
- External area hydrogen detection provided with safety shutdown 40x less than LEL.
- Dual containment integrity monitoring with system breach shutdown.



Environmental Protection

- IP54 sealed Power Supply Unit (PSU) with integrated water-cooling system.
- Warm water feed detection and automatic output regulation up to 28°C.
- High ambient detection up to 45°C with automatic output regulation.
- Dust and corrosion protection for difficult industrial conditions.



Convenience

Installation:

- Single compact foot-print skid design incorporates all equipment, including water cooled PSU cabinet and fully ventilated electrolyser compartment.
- Integrated brine feed vacuum system eliminates the use of conventional brine dosing pump set, with a factory calibrated and preset brine dilution feed.
- Sodium Hypochlorite output is fully degassed and ready to dispense directly into conventional external product tank facility.
- Systems come supplied with dual level switch assembly ready to fit to external tank for complete automation of tank refilling cycles.
- A batch signal operation mode can be utilised to enable direct solution feed to process/treatment tank, eliminating need for dosing/transfer pump sets.

Operation:

- HMI Touchscreen control interface with process mimic screen.
- On-screen graphical displays for live/historic data visualisation.
- System warnings with simple to follow on-screen annotations.
- System parameters, operation history and alarm conditions recorded and accessed via SD card.
- Service interval calendar reminders.
- Secure access to operation and adjustments with user level code protection.
- Remote access via Modbus TCP/RTU and other options.

Maintenance:

- Independent CIP (cleaning in place) connections, ready for easy attachment of temporary or permanent cleaning operation, where poor salt sources are unavoidable.
- Easy access to all equipment hardware using basic tool sets for simple and quick parts inspection/replacement.
- Low frequency PPM requirements, 2-year service cycle.

Delivery:

- All systems complete in-house Factory Acceptance Testing (FAT) and pre-commissioned ready for plug-and-play commissioning.
- Shipping is possible via air freight and sea due to horizontal or vertical crating options.



Automation

- Soft-start operation to optimise system efficiency.
- Complete volumetric control of dilution feed water and brine addition for exact salinity/chemistry.
- PSU automatic output regulation in response to warm water feed, high ambient temperature and electrolyser temperature.
- Auto correction of system output in response to changes in water feed pressure, brine feed and dilution salinity.
- Early detection of electrolyser scaling and output compensation.



Sustainability

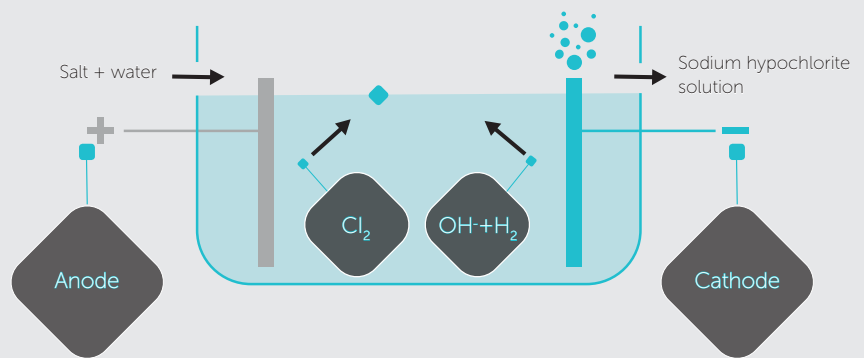
- Low salt consumption with high efficiency electrolyser technology.
- Adaptive Response control software extends PSU and electrolyser operational life.
- 5-year limited electrolyser warranty with system life expectancy of 15+ years.
- Reduced weights and volumes in shipping.



At a glance

Hyprolyser® electrochlorination technology

Electrolytic chlorine chemistry produces a non-hazardous solution of sodium hypochlorite range (0.6% ± 0.1% Cl₂).



Skid system design

Hyprolyser® iSEC® systems are supplied in a skid format and are available in a range of chlorine generation capacities to suit your needs:

Model	Capacity	
iSEC®-3 250	250 g/h	13 lb/day
iSEC®-3 500	500 g/h	26 lb/day
iSEC®-3 1000	1000 g/h	53 lb/day
iSEC®-3 2000	2000 g/h	106 lb/day





Technical Data

Power consumption	4.0 – 5.0 kWh/kg Cl ₂
Salt consumption	3.0 – 3.5 kg/kg Cl ₂
Sodium hypochlorite strength	0.6% ± 0.1% Cl ₂
Weight	Max. 165kg
Supply voltage	model dependent 110VAC to 460VAC



The Hyprolyser[®] iSEC[®] is available in the following capacities.

Approx. Capacity	Drinking water MLD @ 1ppm Cl ₂				
	48				iSEC [®] -3 2000
	24			iSEC [®] -3 1000	
	12		iSEC [®] -3 500		
	6	iSEC [®] -3 250			
Equivalent chlorine per day	Chlorine gas, kg	6	12	24	48
	Sodium hypochlorite 14%, L	36	73	145	291
	Calcium hypochlorite 70%, kg	9	17	34	69

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