

# Hypogen, the new range of onsite sodium hypochlorite generators



The Hypogen system generates low strength sodium hypochlorite solution, onsite and as required. It is one of the most sophisticated onsite sodium hypochlorite generators on the market and was developed with the end user in mind. It is fully automatic, designed for reliability, has a low operating cost, and is economically priced.

## Applications

- Swimming Pool Water
- Potable Water
- Municipal and Industrial Wastewater
- Remote Chlorine Dosing Plants

## Introduction

Liquid Chlorine's onsite sodium hypochlorite generator, Hypogen can produce up to 24kg per day of equivalent chlorine. The Hypogen system is designed as an alternative to chlorine gas or commercial sodium hypochlorite. By generating low strength sodium hypochlorite onsite, the safety risks involved in handling and storing large quantities of chlorine gas or high strength commercial sodium hypochlorite, are eliminated. Additionally, the Hypogen system, when compared to commercial sodium hypochlorite, can significantly reduce a site's chemical operating costs, while eliminating the associated chemical by-products used to stabilize it. The cost of onsite generated sodium hypochlorite, compared to chlorine gas, is slightly higher, however this is quickly offset by the increased public safety, reduced staff training costs, and the environmentally positive benefits of using natural salt generated chlorine.

The Hypogen series of onsite sodium hypochlorite generators are fully automatic and are controlled using a PLC and colour operator touch screen. The colour touch screen makes the system extremely easy to understand and operate, while giving the operators detailed graphical information on the system. There are 17 alarm conditions that lockout the system, including low mains water inlet flow, low brine flow, high cell pressure and high and low electrolyte temperature alarms. Each alarm brings up its own page on the touch screen with detailed information, to help operators troubleshoot, if required.



The Hypogen system also comes with a GSM modem to enable the system to be remotely monitored and controlled. SMS text messages can be sent and received by the Hypogen controller from selected phone numbers to allow remote notification of alarm conditions, plant status and remote operation. The modem also allows Liquid Chlorine to fully access the Hypogen controller for diagnostic purposes.

The Hypogen system produces onsite low strength 0.8% sodium hypochlorite from water salt and electricity. This is done through the electrolysis of the brine solution, which takes place in a once-through process. The brine solution enters the electrolyser cell, and as it travels through the cell electricity converts the brine solution into low strength sodium hypochlorite.

The key component in any electro-chlorination system is the electrolyser cell. In the Hypogen system both the anodes and cathodes are made of titanium. The anodes are coated with a platinum group mixed metal oxide and come with a five year warranty from the first date of operation.

One other benefit of the Hypogen system is that at concentrations below 1% sodium hypochlorite is classified as a non-hazardous chemical. The Hypogen series of generators produce 0.8% sodium hypochlorite; this simplifies storing and handling requirements and is much safer for staff and operators to deal with, yet is still very effective as a disinfectant.

## Key features:

- > Major generator components are pre-assembled, wired and mounted on a common frame for ease of installation.
- > Produces a natural, environmentally positive, stable, low level pH balanced chlorine.
- > Fully automatic operation using PLC control, complete with remote GSM monitoring.
- > Vibrant graphic colour operator touch screen
- > SMS text alarm notification and remote control.
- > 17 safety alarm interlocks.
- > Long life anodes with 5 year warranty.
- > Positive hydrogen gas dilution and removal for added safety.
- > Low operating costs, with reliable, low maintenance operation.
- > Compact design, customized configurations available to fit existing space.

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## System Components

Each Hypogen system is supplied with the following components as standard to enable a quick and easy installation:

- Hypogen system, including control panel and electrolyser cell, pre-assembled on a common frame, tested and ready to be fixed in place.
- A large mains water carbon pre-filter.
- A twin tank water softener with automatic changeover.
- 1000 litre salt saturation tank.
- Air dilution blower and air pressure switch.
- Chlorine storage and salt saturation tank level sensors.

Optional items that can be supplied with the Hypogen System:

- Chlorine storage tanks.
- Chlorine dose pumps.
- Chlorine eductors.

## Technical Data

**Capacity:** Two sizes are available at present:

Hypogen 1000 = 1.0kg Cl<sub>2</sub> / hr.

Hypogen 500 = 0.5kg Cl<sub>2</sub> / hr.

**Power consumption:** Approximately 4.5kWh per kg of chlorine.

**Salt consumption:** 3.75kg of salt per kg of chlorine.

**Sodium hypochlorite strength:** 0.8% (8g/l).

**Dimensions of Hypogen frame (H x W x D):** 2060 x 1350 x 350mm, or customized to suit.

**Water Pressure (Min/Max):** 100 - 800kPa.

**Water Temperature (Min/Max):** 5-27deg.C.

**Weight (Max):** 300kg

**Power Supply:** Hypogen 1000 = 3Ø/N/PE 400V

Hypogen 500 1Ø/N/PE 230V

## Installation & Servicing

A Hypogen onsite sodium hypochlorite generator is easily installed into your existing system or new plant. The main components are pre-assembled with only the main connections and interface piping between the supplied components required. Liquid Chlorine can organise the complete installation and system changeover service if desired.

The Hypogen system needs to be serviced on a six-monthly basis. This is to confirm the system is operating correctly and clean the electrolyser cell if required. All that is required from the operator onsite is the regular addition of salt into the salt saturation tank.

## Cost

The Hypogen system can either be purchased or leased. Leased systems can either be a fixed capacity or a variable capacity lease. In the fixed capacity lease, a flat fee is charged per month for the unit. In the variable capacity lease, a fee is charged per kg of chlorine produced per month.

**Purchase Price:** Hypogen 1000 = \$56,800+GST

Hypogen 500 = \$46,750+GST

**Fixed Monthly Lease:** Hypogen 1000 = \$1,150+GST / Month

Hypogen 500 = \$775+GST / Month

**Variable Capacity Lease:** By Negotiation.

One of the benefits of leasing the Hypogen system is that the system is completely maintained as part of the lease. Please enquire for additional benefits and information.

## Future

Liquid Chlorine New Zealand Limited plans to release an economy model, the Hypogen 500E, in the near future. This model will have reduced features in comparison to the standard Hypogen range and is designed with small swimming pool complexes and remote dosing plants in mind.

## Notes

Equivalent Chlorine: 1kg of chlorine produced from the Hypogen system is equivalent to:

- 1kg of chlorine gas.
- 7.7L of 13% commercial sodium hypochlorite.

Prices and technical data subject to change without notice, please consult Liquid Chlorine or your authorised reseller for up-to-date information.



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