Water Technologies

Electrocatalytic Products Chloropac® System

Shipboard Installations

SIEMENS

Description: Typical Chloropac® System Shipboard Installation

The Chloropac® System for Sodium Hypochlorite Generation is designed to prevent marine growth in sea water piping, heat exchangers, sea chests and coolers etc. Thousands of systems have been installed over the past 25 years and it is now the preferred method of marine growth prevention for ship owners and operators. Low level, continuous hypochlorination has been shown to be more effective than other types of marine growth prevention systems.

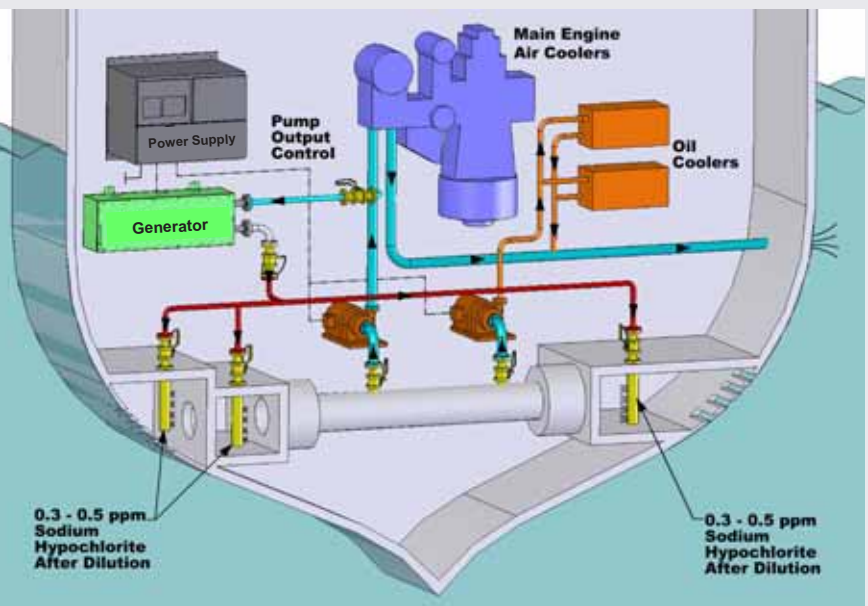
A small amount of sea water, 2 m^3/hr to 6.8 m^3/hr, (9 GPM to 30 GPM) is taken from a pressurized sea water line. The water passes at high velocity through the electrolytic cells where part of the salt is converted to sodium hypochlorite. This is then returned to the sea chest and mixes with the incoming sea water. The cooling water now contains a trace amount of sodium hypochlorite in sufficient quantity to prevent the attachment and growth of marine organisms, thus keeping all circuits, from intake to discharge, free from fouling. Sea water circulating pumps can be interconnected with the Chloropac® Systems to ensure that the output of sodium hypochlorite generated is automatically adjusted to suit the flow rates on board. Additionally, a Biofouling Control Analyzer (BFA) can be provided to automatically control hypochlorite production and prevent pollutant discharge.

The Chloropac® System Shipboard Range

Suitable Chloropac® System models are available from our extensive shipboard range to treat different sea water flow rates.

Chloropac® System installations include: Tankers, Ocean Cruisers, Offshore Supply Vessels, Drilling Rigs, Navy Ships, Fishing Boats, Tug Boats, Ferries, Carriers, and Reefers. Our full reference list is available upon request.

Typical Chloropac® Hypochlorination System



Key Benefits

- Continuous hypochlorination
- Control of Micro and Macro fouling organisms
- Manual or Auto adjusted controllers
- No pollutants are discharged overboard
- No stored chemicals required
- Low level of hypochlorite is produced by The Chloropac® Systems' electrolytic generator
- All production is injected into sea chests
- No other chemicals are required
- The use of the Chloropac® System reduces maintenance costs for the ship owner

Specifications of SB Model Numbers								Power Supply				Generator			
								Dimension		Weight		Dimension		Weight	
Model	Nominal Rated kg/hr (lb/hr)	Input Power kVA	Output DC Volt	Output DC AMP	Concentration PPM	Min. Flow Req. m^3/hr (GPM)	S.W. Treated to 0.5 PPM m^3/hr (GPM)	H mm (inches)	L	D	Net kgs (lbs)	H mm (inches)	L	D	Net kgs (lbs)
SB50	0.05 (0.13)	0.7	15	25	25	2 (9)	100 (440)	600 (23)	410 (16)	220 (9)	85 (187)	120 (5)	600 (23)	120 (5)	8 (18)
SB100	0.1 (0.22)	1.4	15	45	50	2 (9)	220 (880)	835 (33)	580 (23)	510 (20)	85 (187)	120 (5)	900 (35)	120 (5)	11 (24)
SB200	0.2 (0.44)	2.6	15	90	100	2 (9)	400 (1750)	835 (33)	580 (16)	510 (20)	95 (209)	150 (6)	970 (38)	220 (9)	15 (33)
SB500	0.5 (1.1)	3.5	15	220	100	6.8 (30)	1000 (4400)	835 (33)	590 (23)	510 (20)	125 (275)	225 (9)	1450 (57)	215 (8)	20 (44)
SB1K	1 (2.2)	6.9	15	450	180	6.8 (30)	2000 (8800)	813 (32)	580 (23)	365 (14)	107 (235)	315 (12)	1420 (56)	457 (18)	60 (132)
SB2K	2 (4.4)	13.8	39	450	360	6.8 (30)	4000 (17600)	813 (32)	727 (29)	365 (14)	111 (245)	540 (21)	1550 (61)	457 (18)	100 (220)
SB3K	3 (6.6)	27	45	450	540	6.8 (30)	6000 (26400)	1600 (63)	727 (29)	700 (28)	510 (1122)	715 (28)	1550 (61)	457 (18)	130 (286)
SB4K	4 (8.8)	36	60	450	725	6.8 (30)	8000 (35200)	1600 (63)	965 (38)	700 (28)	600 (1320)	845 (33)	1550 (61)	457 (18)	160 (352)
SB5K	5 (11)	45	75	450	900	6.8 (30)	10000 (44000)	1600 (63)	965 (38)	700 (28)	690 (1518)	1020 (40)	1550 (61)	457 (18)	190 (418)
SB6K	6 (13.2)	54	54	450	1090	6.8 (30)	12000 (52800)	1600 (63)	965 (38)	700 (28)	750 (1650)	1195 (47)	1550 (61)	457 (18)	220 (484)

Note that all the data above is expressed in nominal values and are subject to change without notice.

Chloropac® Systems Advantages

- Continuous hypochlorination (0.3 to 0.5 ppm) will control Micro as well as Macro fouling organisms. Micro = slime, algae and weed. Macro = barnacles, mussels, clams, hydroids, etc.
- The Chloropac® System has been shown to be 100% effective in preventing marine growth.
- The Chloropac® System utilizes platinum on titanium Concentric Tube Electrode (CTE) cells to produce the hypochlorite from sea water.
  - Normal CTE cell life is about seven (7) years
  - The CTE cells are warranted for five (5) years.
- The use of the Chloropac® System reduces maintenance costs for the ship owner.
- The Chloropac® System controllers can be adjusted manually or automatically to control the amount of hypochlorite being produced.
  - The overboard residual can be controlled to 0.1 ppm or less.
  - No pollutants are discharged overboard.
- The low level of hypochlorite is produced by the Chloropac® electrolytic generator, and all production is injected into the sea chests.
  - There is no safety hazard storing chemicals with a Chloropac® System.
  - No chemicals are required to be stored on board the vessel.
  - No other chemicals are required.

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