Technical data for BacTerminator® Safe

Size 1 and 2

ECA water production/ BacTerminator Water Concentrate	50-100 g active chlorine/day, enough to treat 50-200 m^3 water a day with a active chlorine concentration of 0.5 ppm
NaCl (salt) consumption	6 g per 1 g active chlorine
Power consumption	20 Wh per 1 g active chlorine
Control	PLC
Alarm and monitoring	Filling up with NaCl (salt), water inlet, change the pre-filter ECA concentration in water low (if ORP sensor connected) ECA concentration in water high (if ORP sensor connected) Outlet – alarm, warning – relay Inlet – Water Meter, (ORP Sensor – Optional)
Safety	Shutdown on alarm
Size	Cabinet (plastic) wall-mounted H x L x W in mm, 600x900x250
Power connection	110/120 V / 50-60 Hz or 230/240 V / 50-60 Hz ca. 50 VA , IP 54
Extra equipment	ORP sensor to monitor concentration of ECA in water system External high capacity brine tank High capacity pre-filter/water softener

Certification/Approvals:

CE: Listed according to the European Biocide Regulation (EU) no. 528/2012 for following product types 1-Human hygiene, 3-Veterinary hygiene, 4-Food and feed area, 5-Drinking water	**Important:** Use BacTerminator Water Concentrate safely. Always read the label and product information before use.

Bigger systems on request.

Cooling water installation with BacTerminator®

	Water quality before installation of BacTerminator®	Water quality after installation of BacTerminator®	Log reduktion	% reduktion
Legionella/L	300	<1	Log 2.5	99.5%
Total Viable Count 22° CFU/ml	3,000	12	Log 2.4	99.4%
Total Viable Count 37° CFU/ml	3,000	10	Log 2.5	99.5%
Hot bath water in changing room / indoor swimming pool				
Legionella/L	400	<1	Log 2.6	99.6%

Water analyses by Eurofins.

Hot water system – 360 apartments

	Before installation of BacTerminator® Safe	4 days after installation of BacTerminator® Safe	35 days after installation of BacTerminator® Safe	87 days after installation of BacTerminator® Safe
Total Viable Count 37° (CFU/ml)	2.690	10	Below detection limit	Below detection limit
Legionella CFU/L	10,.000	Not measured	Below detection limit	Below detection limit

Detection limit for Total Viable Count 37°C (ISO 6222): 1 CFU/ml. Detection limit for Legionella measured with Legipid: 90 CFU/l.

BacTerminator® Safe – a safe and **simple system** to control **Legionella** in hot water systems

– **without** handling any **chemicals**

BacTerminator® Safe is an on-site system which, using drinking water, electricity and NaCl (table salt) produces an extremely effective disinfectant, known as ECA Water (Electrochemically Activated Water).

ECA water is known as a highly effective disinfectant against Legionella and biofilm. The system operating costs are very low, and minimal monitoring is required for optimal functioning.

The advanced electrolytic cell was developed and made in Denmark by Adept Water Technologies. It is one of the most efficient electrolytic cells on the market, meaning that electricity and NaCl consumption is very low. Production of a concentration 0.3 ppm ECA water in 1,000 litres of water consumes 7 Wh and 1.8 g NaCl. This means that even big units such as schools, nursing homes, hospitals and housing associations can be secured for a few cents a day.

Applications:

- Hot water systems in schools, hospitals, office buildings, residences, public buildings
- Drinking water systems
- Process water
- Cooling water
- Water to be stored

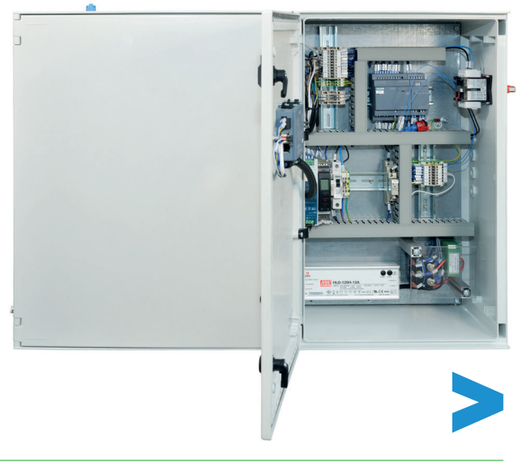

Fig. 1: BacTerminator® Safe

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Simple, robust, compact and smart

The BacTerminator® is designed to require minimal service. The system is typically inspected once a week to check that the salt level and the pre-filter are in order. Topping up the NaCl (salt) and replacing the pre-filter take less than 10 minutes without having to shut down the system.

The system has an built-in control and monitoring system. This means that you will be alerted if the pre-filter needs replacement, or additional NaCl (salt) is required.

BacTerminator® Safe is simple to install and your own plumber can do it if he is trained by Adept Water Technologies. He can also perform your annual service and provide the consumables you need during the year.

BacTerminator® Safe is supplied complete for installation, including a complete BacTerminator® Safe system containing controls, BacTerminator® technology, the required pre-filter, salt tank, dosing pump and inlet for pulse from the flowmeter. The system can be supplied with a sensor for online monitoring of your water system.

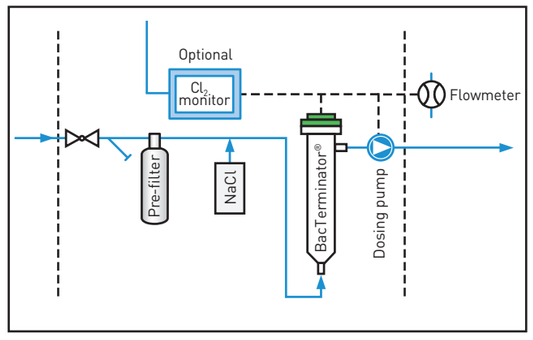

Fig. 2: Process in BacTerminator® Safe

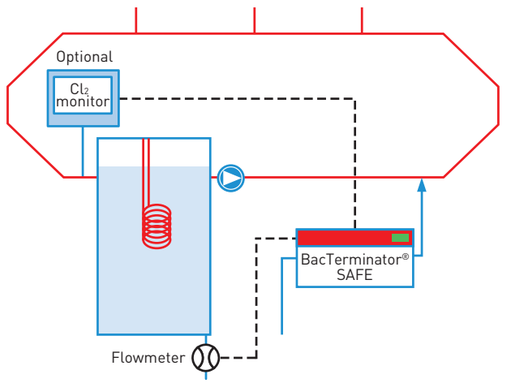

Fig. 3: Installation

Advantages of the BacTerminator® Safe

- Disinfects with extremely high efficiency
- Low operating costs
- Requires no storage and handling of chemicals
- No increased risk of corrosion thanks to an extremely low chloride content
- Needs only minimal ongoing maintenance
- Easy to install
- Has built in monitoring for high security

Facts: **the latest research** has shown that ECA water is better at disinfecting than both hypochlorite (OCl^-) and chlorine dioxide (ClO_2)

Sources: »**Comparative Antimicrobial Activities of Aerosolized Sodium Hypochlorite, Chlorine Dioxide, and Electrochemically Activated Solutions Evaluated Using a Novel Standardized Assay«.** By R.M.S. Thorn, G.M. Robinson and D.M. Reynolds: Antimicrobe Agents Chemotherapy 2013, 57(5):2216. DOI: 10.1128/AAC.02589-12. Published Ahead of Print 4 March 2013.

»Electrochemically activated solutions: evidence for antimicrobial efficacy and applications in healthcare environments«. By R.M.S. Thorn, S.W. H.Lee, G. M. Robinson, J. Greenman & D. M. Reynolds. Received: 13 April 2011 / Accepted: 15 July 2011 / Published online: 2 August 2011 # Springer-Verlag 2011.

Facts: **ECA water**

When water containing chloride (Cl^-) runs through the electrolytic cell, active chlorine in the form of Cl_2 is formed in the water.

This reacts very quickly with the water and forms an equilibrium of hypochlorous acid (HClO) and hypochlorite (OCl^-). These two substances are also called active chlorine. Active chlorine is considered to be one of the most effective disinfectants and it is by far the most commonly used disinfectant globally for drinking water.

The hot water system will typically be given a dose of around 0.3 ppm, which corresponds to the levels used in Sweden and Germany and elsewhere to treat drinking water.

Example:

»One school with 1,000 pupils uses an average of 4,000 litres of hot water a day. Legionella control with BacTerminator® Safe and 0.3 ppm ECA water will use 200 Wh and 10 g NaCl «.