



Over the past several years there has been an increase in frequency and variety of bacterial contaminants found in all types of water ranging from drinking water, industrial process water and water used for recreational purposes.

Traditional methods employed to treat water include:

Chlorine	Hazardous, odors, not completely effective
Acid	Expensive, not completely effective, time consuming to apply, surface treatment only
UV-Light	Limited effect on "bio-film", must be used with another technique
Ozone	Does not treat bio-film, must be used with other techniques
Laser	Only effective at point of use. Must be used with other techniques
Heat	Expensive, requires 20 mins at 100°C

The Voigtlaender Generator

Water disinfection and disinfection in general

- 1-Reduced operating costs
- 2-Replaces chlorine and is more efficient
- 3-Free of chemical additives
- 4-Ideal for remote locations
- 5-Eco friendly
- 6-Multiuse, for water disinfection and disinfection in general



SaniFluid: How it works

Combining salt, water, and electricity

- Salt and water are activated by an electrical current to produce a disinfectant
- The disinfectant (SANIFLUID), is a HOCL (hypochlorous acid) rich solution
- SANIFLUID remains stable for extended periods of time
- SANIFLUID is an extremely effective disinfectant (>100 times more effective than OCl-)
- SANIFLUID penetrates the cell membrane by osmosis
- Destroys bacteria and virus from within
- Removes and prevents biofilm (breeding ground for bacteria)
- Always active

Solutions for airports

Possible areas of use

- Disinfection of potable water for airline usage
- Disinfection of process water for surface cleaning and cooling towers
- Safe and secure drinking water for all points of usage in the terminal (toilets, fountains,...)

Advantages

- Energy cost reduction for hot water system due to temperature reduction from 65°C to 45°C (no heat disinfection needed)
- Low investment and operational costs, return on investment within a few years
- Depot-effect of SANIFLUID leads to continuous disinfection of water trucks, airplane tanks and water systems
- Very compact unit, easy to retrofit into existing rooms
- Simple to operate, fully automated, no hazardous materials involved
- Operating staff does not require hazardous material training or special skills
- According to WHO Standard, DIN 901 and §11 of the Trinkwasserverordnung (German Drinking Water Standard)
- Quality tested and approved by several independent laboratories

Example: Frankfurt airport

The problem:

Storage of potable water for aircraft at Frankfurt Airport
Disinfection of the pipelines and water trucks

The solution:

Frankfurt airport is now using the Voiglaender Generator g2000, to treat the water that is meant for potable use in airplanes to prevent bacterial contamination.

To keep within the airline regulations the disinfectant is added at a rate of 0.8-1mg/l free chlorine, even though full disinfection effect can already be reached around 0.1-0.3mg/l.

System employed: **Voiglaender g2000**
Conformance: **DIN EN 901 (for use in drinking water)**

Treated water per day: 150,000 liters
 Airplanes handled per day: 1.300 + Tankers employed: 21
 Employees: 50
 Filling stations: 4

Savings on water and waste water use per year: EUR 150,000
 Training for 1500 staff at 2hrs/yr for handling of chlorine gas
 3000 hours at EUR 30 = EUR 90,000

Yearly Savings in operational costs: EUR 240,000



The result:

Fraport AG is saving 26 Mio. Liters of fresh and waste water each year
 The fleet of water trucks could be reduced by half
 Truck cleaning and disinfection was reduced from 24hrs to 15min per truck
 Safety training for staff working around the chlorine disinfection system is
 not needed anymore (saves 2800 man hours a year)
 The health risk of the chlorine gas system has been eliminated

In summary: lower costs, higher workplace safety standard, better for the
 environment, better quality!

Other airports

These technologies are used in other airports, like Macao and Saarbrücken.
 With the same objectives: disinfection of water for airport instalations and
 airplanes. The results are the same in any utilisation.



Certificates



DIN 1276
 DIN 1650
 DIN EN 901/ DIN 19643 – Swimming pool Conformance to WHO Standards
 CE Conformance
 MEBAK Band II 2.10.7

References

Fraport AG,
C.A.M.,
Saarbrücken Airport
Mecklenburger Ernte
Weihenstephan
Tnuva Dairies
Gazit Chicken farm
Millouff Chicken Farms
University of Iraq
University Hospital
Boecklunder Group
HatchTech B.V.

Frankfurt International Airport
 International Airport
 Regional Airport
 Salad Producer
 Dairy
 Cottage Cheese and Yoghurt
 chicken rearing
 chicken rearing
 Research and development
 Würzburg Hospital
 Meat Processing plants
 Supplier of incubation solutions

Drinking water for aircraft
 Fresh Potable water for airplanes
 Drinking water for aircraft
 Salad washing
 Micro-biological control fresh water
 C.I.P. with AnoFluid
 Drinking water treatment
 Drinking water treatment
 disinfection applications (potable water)
 Cooling Tower water disinfection
 Disinfection of Process water and cleaning
 Disinfection of water for incubators

