



INNOVATING WATER HYGIENE

SANIKILL™

THE MONOCHLORAMINE

THE MOST EFFECTIVE TECHNOLOGY
AGAINST LEGIONELLA.



Effectiveness
Protection
Safety



DISCOVER THE SCIENCE BEHIND

SANIKILL[®] Technology

Continuous supplemental treatment systems are the most effective remediation technology to control *Legionella*. Previously, the most common disinfection methods used chlorine/hypochlorite or chlorine dioxide. However, these strong oxidizers caused severe and frequent corrosion issues in premise plumbing systems.

Thanks to Sanipur's strong scientific experience, our R&D team developed the SANIKILL[®] monochloramine technology. This system has proven to be the most effective against *Legionella* and other waterborne pathogens. Due to its stability as a combined chlorine specie, it is not corrosive to the piping system. SANIKILL[®] is based on the on site production and accurate dosage of monochloramine.



The patented SANIKILL[®] monochloramine system has risen to be the **ALL STAR** disinfection technology.

SANIPUR ALL-STAR

LEADING THE WAY

- First to use Monochloramine in Legionella remediation, now the #1 technology in water hygiene
- First to Achieve 100% efficacy within 1 week of application of SANIKILL[®] technology
- First to develop predictive remote monitoring and control system for water hygiene equipment
- First to apply Water Safety Plan methods to water hygiene

CHOSEN BY EXCELLENCE

- Chosen by the largest and most prestigious healthcare networks in the U.S. including VHA
- Preferred technology of leading water treatment professionals nationwide

CERTIFIED RELIABILITY

- The ONLY Company with 5 international certifications; ANSI/NSF 60/61, NADCA/ASCS, (Air System cleaning specialist), European Biocide Product Regulation, ISO 14001, ISO 9001/15

VALIDATED BY SCIENCE

- 13 peer reviewed international papers
- Endorsed by the World's top Legionella experts
- PhD Industrial Chemists supervise all R&D and technical operations

CONTINUOUS INNOVATION

- 11.2% of revenue is reinvested in R&D each year
- 5 individual patents in Water Hygiene
- The only Company in the world listed in the most stringent biocide regulation (European BPR) for domestic hot water

Greater effectiveness

Monochloramine is a more stable oxidant compared to other chlorine-based products, such as chlorine and chlorine dioxide.

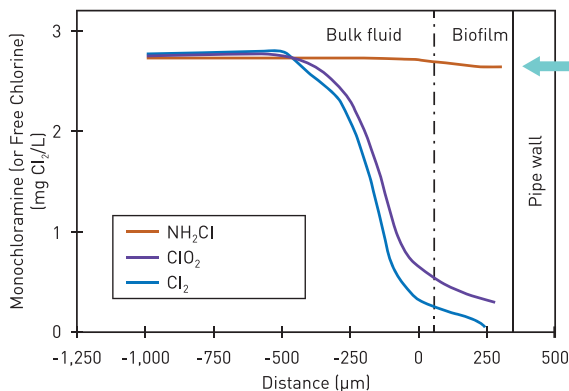
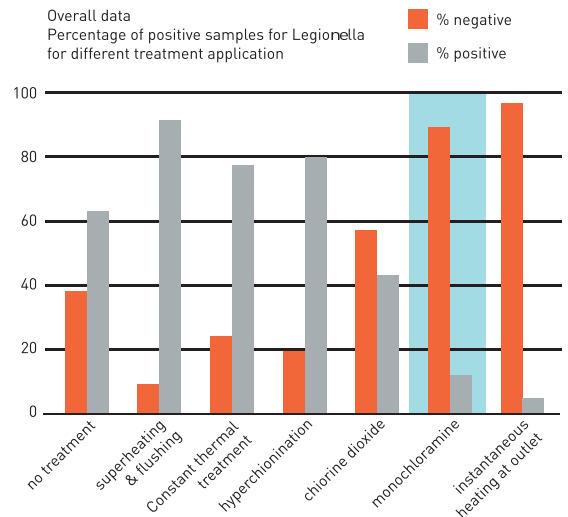
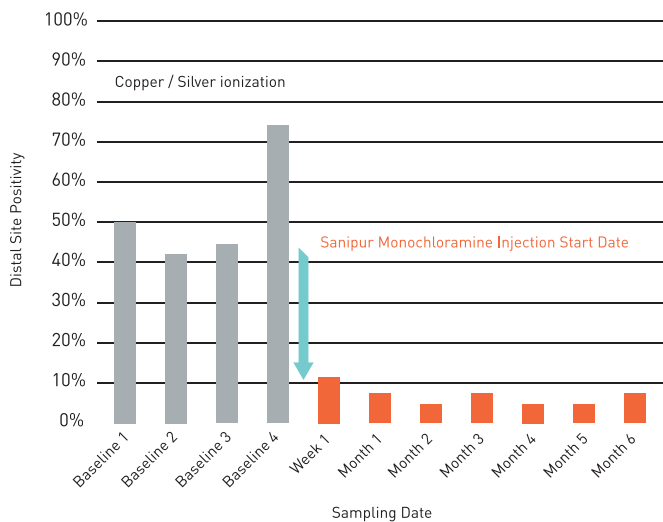
This feature ensures:

- Longer presence thru the water distribution system;
- Better biofilm penetration;
- Compatibility with all premise plumbing materials;
- No production of potentially harmful disinfection by-products;

In detailed studies, performed in collaboration with Italian and American Research Institutions, the SANIKILL® monochloramine system was demonstrated to be the best available technology for *Legionella* remediation.

Field studies demonstrated that just after one week from the beginning of treatment *Legionella* was reduced by 97% with eventual reduction to 0% positivity.

The comparison with the most common disinfectants currently used in the fight against *Legionella* shows that SANIKILL® monochloramine is the most effective in reducing the presence of this and other waterborne pathogens in the domestic hot water distribution systems.



Complete biofilm penetration

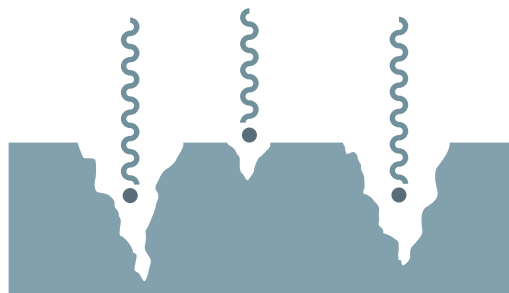
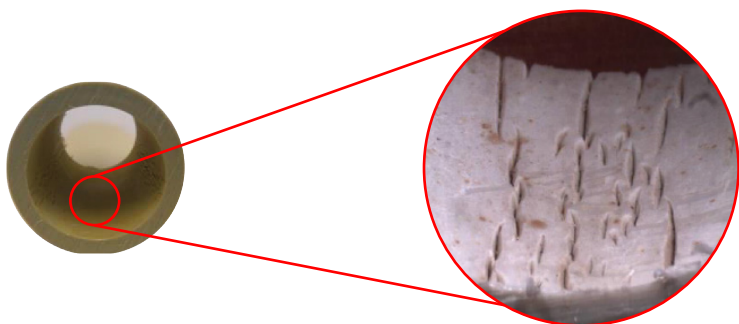
Thanks to greater stability, SANIKILL® monochloramine is better able to penetrate the biofilm where *Legionella* lurks and therefore inactivate quickly. Better biofilm penetration also means lower chemical consumption resulting in operating cost reduction.

Pipes and joints protection



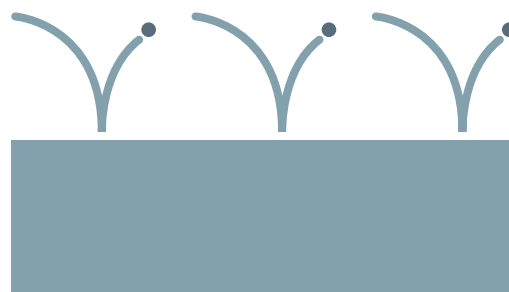
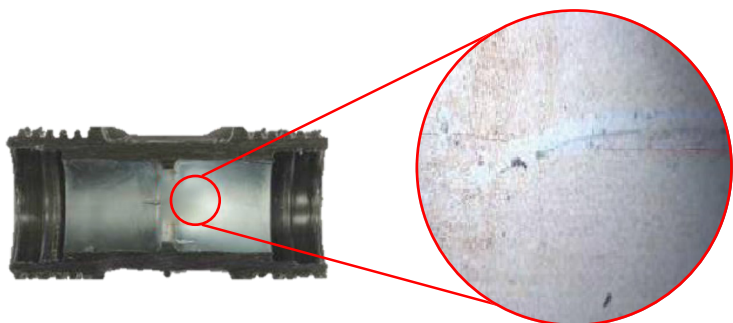
Being a weaker oxidant if compared to other chlorine-based disinfectants, monochloramine can be used as a disinfectant for long periods without producing any damage to the hydraulic system, regardless of the material it is made of.

Due to their physico-chemical features, chlorine and chlorine dioxide have shown to be extremely aggressive against every pipe and joint material (both plastic and metal).



Chlorine and chlorine dioxide-based products

On the contrary, the SANIKILL® monochloramine system has shown to be suitable for treatment of all the domestic hot water distribution systems made of copper, stainless steel, galvanized iron, polyethylene, etc.



SANIKILL® monochloramine

Stability and safety

SANIKILL® patented technology is based on a completely automated, remotely monitored and managed system for on-site monochloramine production with the highest safety standards.

The electronic control unit and a precise reactor geometry ensure a perfect monochloramine dosage avoiding the production of disinfectant by-products (DBPs) such as: free ammonia, THMs (trihalomethanes), HAA5 (haloacetic acids), N-nitrosamine (NDMA), nitrites and nitrates.

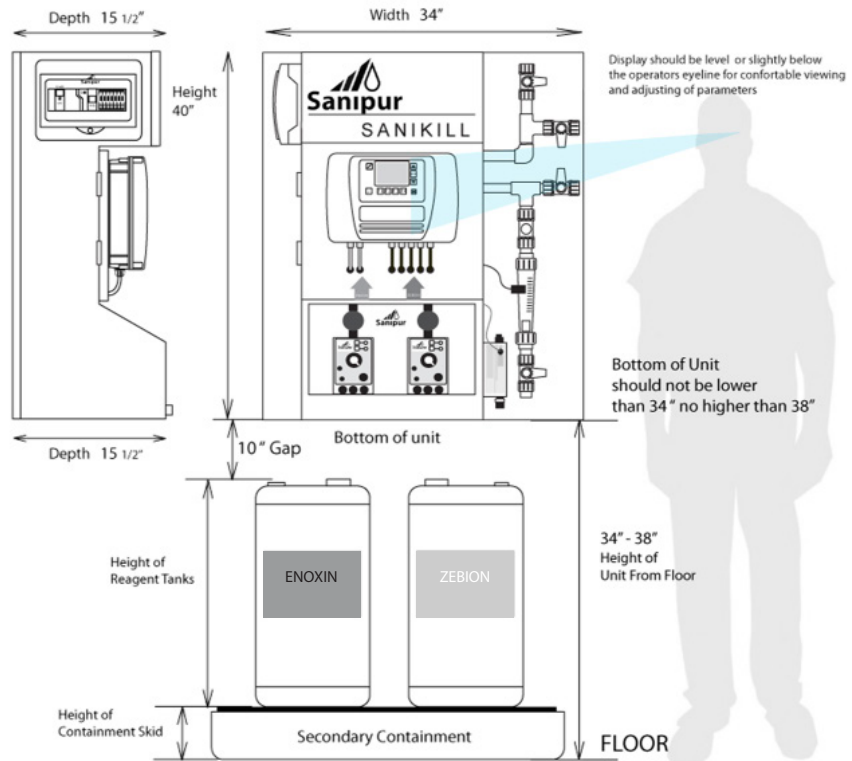
Disinfection by-product	Maximum contaminant Level	Average SANIKILL® treated water
NH ₄ ⁺	0.5 mg/l	< 0.3 mg
TTHM	0.08 mg/l	ABSENT
HAA5	0.06 mg/l	ABSENT

Water treated by SANIKILL® produced monochloramine has no taste and odor problems often associated with other chlorine-based disinfectants.

	Efficacy	Metal compatibility	Plastic compatibility	Toxic by-products	pH influence	Equipment costs	Operating costs
CHLORINE / HYPOCHLORITE	+	- -	-	HIGH	×	\$	\$
CHLORINE DIOXIDE	++	-	- -	HIGH	✓	\$ \$	\$ \$
MONOCHLORAMINE	+++	++	++	LOW	✓	\$ \$	\$ \$
Cu / Ag	+	- -	++	HIGH	×	\$ \$	\$ \$



Certified to NSF / ANSI / CAN 61 & 372



SANIKILL[®] for each application

Type of monochloramine generator	Generator model	Max. monochloramine production rate	Max. operating pressure	Range of applications
SANIKILL - lite	SKLITE-025/S	25 g/h 0.055 lb/h	100 psi (7 bar) 140 psi (10 bar) with HP kit	Nursing homes, small hospitals, large hospital with multiple DHW systems, retirement homes, over 55 communities
SANIKILL One	SKLP-060/S	60 g/h 0.13 lb/h	100 psi (7 bar) 140 psi (10 bar) with HP kit	Large nursing homes, hospitals, hotels, condominium complexes, colleges and universities
	SKLP-150/S	150 g/h 0.33 lb/h	100 psi (7 bar) 140 psi (10 bar) with HP kit	
	SKHP-350/S	350 g/h 0.77 lb/h	200 psi (14 bar)	
	SKLP-800/S	800 g/h 1.76 lb/h	100 psi (7 bar)	
SANIKILL tec	SKTEC-LT2010	1000 g/h 2.2 lb/h	100 psi (7 bar)	Main cold water of large buildings, cooling towers, process water