FILT’RAY®2G
Point-of-Use Filters
Legionella Risk Management

FILT’RAY®2G shower head, faucet, inline filters and wall-mounted shower filters
Disposable water filters

www.aqua-tools.com
BUILDING WATER HYGIENE

A building’s potable water is generally supplied by a public water system (PWS). The Safe Drinking Water Act (SDWA) sets standards for drinking water quality and implements various programs for drinking water safety. The SDWA does not require the water be free of “all” Bacteria and waterborne pathogens. Legionella, pseudomonas, and other opportunistic pathogens can colonize in buildings plumbing systems, particularly the domestic hot water.

Thus, the quality of distributed water is not only the responsibility of the PWS, but also for a building’s owners and managers.

The design and operation of the building’s domestic water systems, as defined by the building's water safety plan, should minimize the risk of infection to the building's occupants.

One way of determining this is by the environmental testing at “points-of-use” (POU) or places where patients or occupants may be exposed to potential pathogens in the building's water system. This should be an integral part of a building's Water Safety Plan.

WHAT ARE THE POINTS-OF-USE AT RISK AND WHO ARE THE PEOPLE TO PROTECT?

The “High Risk” points of use (POU) expose the patient or resident to an aerosolized form of water where water particles are able to be inhaled; this aerosolization primarily occurs at shower heads and faucets. Everyone is potentially vulnerable to legionella bacteria during his or her life, depending on their health status.

However most at risk are people, with weakened immune systems (also known as immunosuppressed) such as Infants, the Elderly, people suffering from chronic disease, smokers, or those undergoing corticosteroid treatment.

WHAT FACILITIES SHOULD DEVELOPE A WATER SAFETY PLAN AND CONSIDER POINT-OF-USE FILTERS?

The facilities that should be concerned with Legionella are those containing domestic hot water distribution and those that expose the patients or occupants to water points of use likely to emit aerosols that may cause the spread of legionella.

Healthcare, Long Term Care, Rehabilitation Facilities, Hospitality & Public Buildings
WHAT YOU SHOULD KNOW ABOUT LEGIONNAIRES DISEASE

Legionnaire’s disease is a severe form of pulmonary infection caused by a bacteria: Legionella. Symptoms are various: fever, cough and breathing difficulty. The risk of contracting this disease increases with age, smoking and immunodeficiency. Legionella proliferates in domestic hot water plumbing systems where it finds various nutrients (corrosion products, iron, and organic materials).

EPA - Technologies for Legionella Control in Premise Plumbing Systems:

Scientific Literature Review – Office of Water EPA 810-R-16-001 September 2016

POU filtration is defined as: the use of a device applied to a single tap for the purpose of reducing contaminants in drinking water at that one tap. POU filtration can be used at specific taps, faucets and showerheads as a temporary measure to provide a physical barrier against Legionella. Hospitals have used this technology as a way to reduce disease transmission through potable water (Ortolano et al., 2005). POU water filtration may be an effective measure for remediation situations if a controlled area in the water system can be targeted. Filters can be installed immediately and are a better alternative than restricting showering and providing bottled water.

Many home owners; facility owners; and operators of hospitals, nursing homes and hotels utilize POU membrane filtration devices, often in a proactive and preventative manner, but also in response to emergencies (USEPA, 2006d). Many hospitals use POU membrane filtration proactively in areas with high-risk patients (e.g., in oncology wards, bone marrow and solid organ transplant units, and ICUs).

RESPONSE TO POSITIVE LEGIONELLA RESULTS

First, analyze the resident’s risk of exposure. If Legionella positivity above acceptable levels is determined by environmental culturing, installation of Point-of-Use filters are the most immediately effective response. Secondary disinfection, such as with Monochloramine, may be implicated for long term remediation. Point of use Filtration may be used in coordination with a secondary disinfection system.
Legionnaire’s Disease (LD) is the most lethal building-related illness (BRI) caused by a microorganism. Legionella has the ability to impact both occupants of a building and surrounding neighborhoods, making it especially dangerous. Once thought to be a rare organism, public health officials now accept that legionella is present over half the nation’s municipal water supplies and has been found in 60-70% of hospital plumbing systems.

At risk exposure places
The CDC estimates the actual number of legionella cases to be somewhere between 8,000 and 18,000 annually. (In The Trenches – by J. David Krause, PhD, MSPH, CIH Published in March 2014)
In the United States, reported cases of Legionnaires’ disease have increased by nearly fourfold since 2000.

More cases of Legionnaire’s disease occur in the summer and early fall but outbreaks or isolated cases can happen at any time. It is important to develop a Water Management Program to reduce risk and to implement industry standard ASHRAE 188.

Download the toolkit https://www.cdc.gov/legionella/main-tenance/wmp-toolkit.html
Immediately Minimizing the Risk of legionellosis and Achieving Regulatory Compliance

Aqua-Tools has developed the innovative FILT‘RAY²G (second generation) line of high quality water filtration accessories for health care, hospitality and other public establishments.

The FILT‘RAY²G Point-of-Use shower head and faucet filters (microorganism’s removal) allow immediate compliance until the water network’s inoculation can be remediated and the water quality returns to acceptable levels through secondary disinfection or engineering controls.

Role of Point-of-Use Filters in Prevention of Legionnaires’ Disease: Results of Two Field Evaluations of Faucet and Shower Filters

Janet E. Stout, PhD Jeanique Parkinson, Stephen Betts, Patrick Racine
Special Pathogens Laboratory and Klenzoid Canada Inc. / Eldon Water Inc.

Concerns over waterborne pathogens in healthcare facilities are no longer restricted to Legionella as exemplified by a June 2017 notice from the U.S. Centers for Medicare and Medicaid Services (CMS). CMS issued a policy memorandum for hospitals and long-term care facilities that put in place requirements for healthcare facilities to develop policies and procedures that reduce the risk of growth and spread of Legionella species and other opportunistic pathogens in building water systems. Facilities are to conduct a facility risk assessment to identify where Legionella and other opportunistic waterborne pathogens (e.g. Pseudomonas, Acinetobacter, Burkholderia, Stenotrophomonas, nontuberculous mycobacteria [NTM], and fungi) could grow and spread in the facility water system. Legionella and waterborne pathogens can persist within building water systems despite municipal water treatment. Supplemental disinfection has been shown to be effective in controlling Legionella [Sidari - 2014, Duda 2014, Borella -2016]. However, low concentrations of these bacteria can still be present that may cause life-threatening infections, especially in immunocompromised patients. Point-of-use filters [POU] at the sink faucet or shower have been used as an additional control measure that provides a physical barrier to pathogen transmission [Baron - 2014]. Multiple manufacturers now produce POU filters for this application and more products are being introduced.

Like other disinfection technologies, POU filters should undergo a process of validation. The stepwise approach recommended for demonstrated disinfection efficacy includes in vitro testing against Legionella, reports of anecdotal experience of efficacy, controlled field studies and confirmatory reports from multiple hospitals with prolonged duration of follow-up [Stout- 2003].

Field evaluation to demonstrate efficacy is one of the critical steps in this validation process and is the subject of this report. A new 62-day point-of-use filter has been introduced that is a tubular membrane microfilter with a 0.1 um pore size (AquaTools FILT‘RAY). The objective of this study was to perform a field evaluation of these faucet and shower filters to determine their efficacy in the removal of Legionella and other waterborne bacteria from the water in a healthcare facility.
MICROFILTRATION FOR IMMEDIATE RISK REDUCTION

→ **EFFECTIVE**
The water filtration barrier technology guarantees to prevent bacteria present in water networks from disseminating into the environment.

→ **PRACTICAL**
The showerheads are screwed on in a few seconds on all shower hoses. Adapters and quick connectors are available for any fixture.

→ **VALIDATED**
A water filtration solution recognized by the healthcare regulatory agencies that are validated daily by many users.

→ **ATTRACTIVE**
Modern design and the Bubl’Air Wash™ technology provides extended life in an attractive high quality finish.

MICROFILTRATION FOR IMMEDIATE RISK REDUCTION


**TECHNICAL CHARACTERISTICS**

- FILT’RAY²G Point-of-Use filters are validated according to ASTM F 838
- Each membrane is integrity tested individually
- Tubular membrane
- Filtration area of 2800 cm² for the 31 & 62 days filters and 3200 cm² for the 3 & 4 months filters
- Membrane porosity at 0,1 μm
- Flow and volume filtration for the shower head from 11.9 L/min at 3 bar ; 4.5 L/min at 1 bar, 2.9 gal/min at 43.5 PSI ; 1 gal/min at 14.5 PSI
- Flow and volume filtration for the faucet from 6.3 L/min at 3 bar ; 2.2 L/min at 1 bar, 1.6 gal/min at 43.5 PSI ; 0.52 gal/min at 14.5 PSI

*Be careful, filters must be removed during the water treatment process. Open all points of use (faucets/showers) to remove biocide and biofilm residues.*
FILT’ RAY²G
POINT-OF-USE-FILTER
Disposable water filters

QUICK LEGIONELLA & PSEUDOMONAS CONTROL

Provide barrier against microorganisms
Extended life up to 3 and 4 months
Self-cleaning membrane
Bubl’air Wash™

HEALTH & SAFETY

TECHNOLOGICAL INNOVATION

SINGLE USE
4 MONTH

SINGLE USE
3 MONTH

SINGLE USE
62 DAYS

SINGLE USE
31 DAYS

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