

FLOWGUARD GOLD[®]

PIPE & FITTINGS

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UNDERSTANDING YOUR ROLE IN PROTECTING WATER QUALITY

Water quality is important, don't risk your reputation by ignoring it.

Water is our most critical resource, but for too long we've taken it for granted. Recent water quality crises have raised awareness that we must be vigilant to ensure the water in our homes is clean and safe for ourselves and our families. It is critical that all associated with plumbing and water quality, take responsibility to minimize any risk of contamination. Using products like FlowGuard Gold CPVC piping systems are something to keep in mind.

The Water Quality Regulatory Lifecycle

Step	Description	Who is Responsible?	What can go wrong?
1	Water Sourcing (Groundwater, Lakes & Rivers)	US EPA State EPA	Pollution
2	Water Treatment	US EPA State Legislatures State Public Health Departments Treatment Facility Operators	Inadequate monitoring Inadequate treatment
3	Water Distribution	US EPA State EPA State Public Health Departments Local Water Utilities Civil Engineers Water Utility Contractors	Leaching Contaminant Intrusion (through degraded/broken mains) Bacterial growth Disinfection byproducts
4	Premise Plumbing	State or Local Building Code Builders & Developers Plumbing Contractors	Leaching Permeation Bacterial growth Failures due to disinfection

The information in the table is for illustrative purposes only and details of the jurisdictions of the individual agencies listed may vary.

Defined safe levels in the drinking water lifecycle can also cause confusion. Water deemed safe in a home or business may be unsafe if in groundwater or lake water. The combination of this complexity with the sensitivity of homebuyers to water quality issues and the high-liability world that we do business in, it is critical for builders, plumbers and specifiers to do what they can to minimize the impact of their decisions on drinking water quality.



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Within a house or other building, there are four potential areas of concern surrounding water quality.

1. Chemical Leaching: chemicals from the piping system get into the water.

Leaching is most common with lead from copper pipes, brass components and solder. While there are new low-lead laws that apply to new products, there are millions of homes with components that were produced before these laws came into existence that can contaminate the water above current safe levels.

Lower levels of leaching can occur in PEX piping systems, which may contain gasoline additives such as MTBE, ETBE, TBA and Toluene among others, due to the chemical crosslinking process. While the leachates from PEX are considered safe under the building code, they have resulted in homeowner complaints due to poor water quality.

FlowGuard Gold pipe and fittings are both certified by NSF 61 for uncompromised water quality and will not introduce contaminants in excess of key state environmental and public health requirements.

2. Chemical Permeation: chemicals from outside the plumbing system soak into the water.

The science of permeation is complex and there are currently no standards addressing the permeability of plumbing materials. PEX is a permeable material and could allow outside chemicals to permeate through the pipe without any warning signs. Given the lack of research and standards involving permeation, concerned professionals should always seek verification that all products coming into contact with PEX piping will not cause permeation. A FlowGuard Gold CPVC system would fail before allowing water contamination due to permeation.



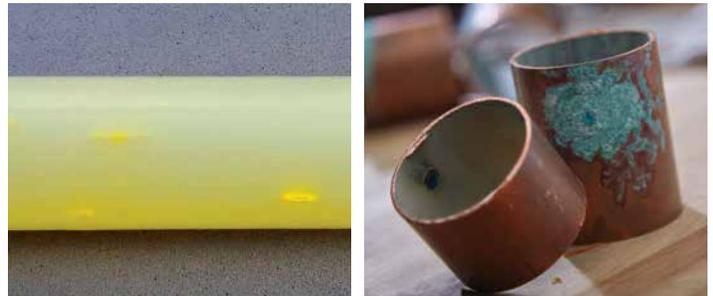
The science of PEX permeation is relatively unknown, as a result some manufacturers have used permeable inks on their own pipe.

3. Bacterial Contamination

Bacteria can be introduced to a plumbing system from a variety of unavoidable sources. No piping system will prevent bacterial growth, however disinfectants such as chlorine, chloramine and chlorine dioxide are commonly added to the water supply to help combat the growth of bacteria in water. Unfortunately, these disinfectants can cause serious problems for PEX and copper plumbing systems.

4. Chlorine Induced Degradation Failures

PEX and copper are both susceptible to significant damage and premature failure caused by the presence of chlorine-based disinfectants in the water – this is especially an issue in hot water lines. Some PEX systems use chlorine-inhibitors which chemically react with the disinfectants in the water, neutralizing them. However, once these inhibitors are exhausted, the disinfectants can continue to attack the pipe wall.



Chlorine induced pinhole leaks and cracks in PEX and copper pipes.

A 2016 study conducted by Google and Plumbing Manufacturers International found that **nearly two-thirds of Americans** were concerned about the safety of their drinking water.

www.safep plumbing.org/ for more information

Have more questions about using FlowGuard Gold CPVC systems?

Visit www.FlowGuardGold.com

or call **855.735.1431** to speak with a piping systems consultant.

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