

The City of Pana water system will be switching to from chloramines to free chlorine on 7/18/2025. Free chlorine will be used until hydrant flushing is complete and chlorine levels stabilize.

What is free chlorine conversion?

“Free chlorine conversion” is a maintenance process that can occur every year when public drinking water systems switch disinfectants from chloramines to chlorine.

Water systems strive to ensure daily delivery of safe drinking water by effectively treating the supply, monitoring vital chemical parameters, and collecting water quality samples. Disinfection is an important step in effective treatment. It reduces the risk of exposure to E. coli and other disease-causing organisms. Some water systems disinfect with chloramines to reduce the formation of regulated byproducts from disinfection. These byproducts can be harmful in cases of chronic exposure above maximum contaminant levels.

Water systems that use chloramines first disinfect source water with chlorine to kill E. coli and other disease-causing organisms that may be present. Next, water systems add ammonia to convert free chlorine to chloramines, an effective disinfectant with a slower formation of disinfection byproducts as compared to free chlorine. This allows water systems to reduce customers' exposure to disinfection byproducts.

To improve water quality, water systems routinely use free chlorine conversion to clean distribution pipes and to preserve and enhance water quality. Water systems generally perform this maintenance in the spring or fall by temporarily relying solely on chlorine to disinfect within the distribution system. In other words, the systems forego adding ammonia for a short period. The systems complete the process by thoroughly flushing the distribution infrastructure.

Why is it necessary?

The complete process removes sediment, films of bacteria and potential issues with nitrification. Water systems that add ammonia as part of the disinfection process may demonstrate nitrification because the nitrogen in ammonia can morph into nitrites and nitrates, which are undesirable in drinking water.

Nitrification decreases the effectiveness of a system's disinfecting process, so water systems that use ammonia as part of their disinfection process regularly monitor for indicators. The most noticeable signal is a drop in residual disinfectants within the distribution system.

How will it affect you?

During free chlorine conversion, customers may experience temporary changes, including:

- Slight chlorine odor or taste.
- Slight discoloration or cloudiness.
- Minor fluctuations in water pressure during flushing.

These changes are normal. The water remains safe for drinking, bathing, cooking and other uses. In fact, most customers don't notice any changes.

The complete process typically requires several weeks to a month, depending on when water systems achieve stability of disinfectants within their distribution systems.

Who should take precautions?

Three groups of water customers should seek professional advice concerning removal methods for chlorine and chloramines from their water supply:

1. Hospitals as well as providers and patients of kidney dialysis.
2. Fish, pond, pool and aquarium owners and operators.
3. Some businesses that use water in their production processes.

What are the benefits of chlorine conversion?

Chlorine conversion offers customers many advantages. The process:

- Improves overall quality of drinking water.
- Reduces nitrification within the distribution system.
- Reduces the long-term potential for disinfection byproducts to develop.
- Removes bacteria from the water distribution system and reduces favorable conditions for bacteria to grow.
- Reduces issues with taste and odor.
- Removes sediments and other materials that may accumulate in pipes.
- Decreases potential for corrosion for pipes.