



# MUNICIPAL WATER MATTERS 2019

A publication by NSF International's  
Global Water Division

**Know Your Requirements**

**NSF/ANSI/CAN 60 vs. FIFRA**

**FAQ: Certified Components vs. End Products**

**Ductile Iron Pipe and Fittings**

**Treatment Chemical Contact Products**

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## What we do at NSF International

Founded in 1944, NSF International is a global independent organization that writes standards, and separately, tests and certifies products for the water, food, health sciences and consumer goods industries to minimize adverse health effects and protect and improve human health.

Operating in more than 170 countries, NSF International is a Pan American Health Organization/World Health Organization (WHO) Collaborating Center on Food Safety, Water Quality and Indoor Environment.

NSF's global water services include testing, certification and auditing for municipal water treatment components and chemicals, plastic piping systems, plumbing fixtures and fittings, point-of-use and point-of-entry water systems and filters.

### Questions?

NSF International staffs a hotline to answer questions from consumers, regulators, water utilities and more.

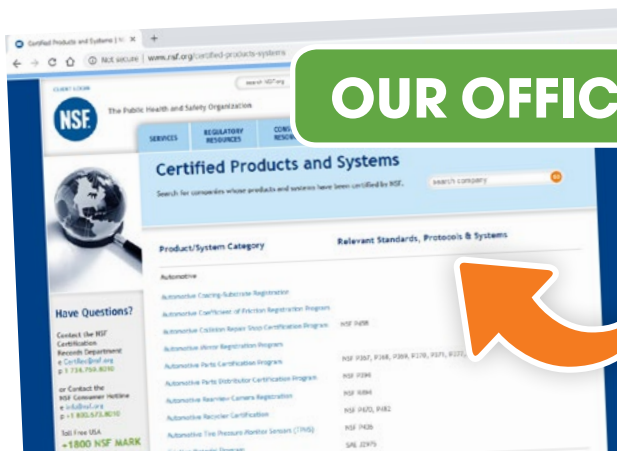
If you want more information or want to confirm a product is certified by NSF International, contact the hotline at +1 800 673 8010 or [info@nsf.org](mailto:info@nsf.org). ■

## OUR OFFICIAL CERTIFICATION LISTINGS

Check NSF's official certification listings to confirm a product is certified by NSF International:

[www.nsf.org/certified-products-systems](http://www.nsf.org/certified-products-systems)

Drinking water system components and treatment chemicals are located near the bottom of this page.



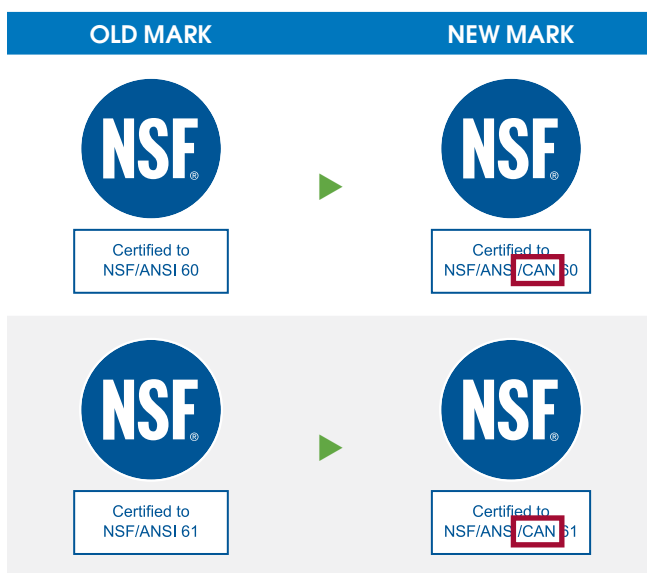
# Staying in the Know:

## Updates to NSF/ANSI 60 and 61

Two industry standards that have been around for over 30 years are going through a big change, and an exciting one! NSF/ANSI 60: *Drinking Water Treatment Chemicals – Health Effects* and NSF/ANSI 61: *Drinking Water System Components – Health Effects* are now accredited by the Standards Council of Canada (SCC) and are recognized as national standards in Canada (in addition to the United States).

### So, what does that mean?

While the standards were only recently designated as National Standards of Canada, the previously published versions have been widely recognized in Canada for years. Now, the official names of the standards will change to reflect the official Canadian recognition and acceptance (i.e. NSF/ANSI/CAN 60 and NSF/ANSI/CAN 61). The NSF certification marks for both standards will also be updated and implemented over the next five years.



In addition to the newly published versions of the widely recognized standards, NSF International also published a companion standard, NSF/ANSI/CAN 600: *2018 Health Effects Evaluation and Criteria for Chemicals in Drinking Water*. As a companion standard, NSF/ANSI/CAN 600 defines the toxicological review and evaluation procedures for specific chemical additives used in drinking water treatment products and plumbing system components. The standard establishes the human health risk, if any, of specific substances that may be imparted to drinking water under the anticipated use conditions of the product.

At NSF, we're proud that these important industry standards will continue to help protect and improve public health. ■



## UPCOMING TRAININGS

### NSF/ANSI/CAN 60 Training

October 16, 2019

Ann Arbor, Michigan

Learn more: [bit.ly/2U5mtvM](https://bit.ly/2U5mtvM)

### NSF/ANSI/CAN 61 Training

October 17, 2019

Ann Arbor, Michigan

Learn more: [bit.ly/2D2mH0o](https://bit.ly/2D2mH0o)

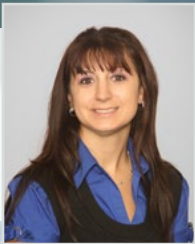
## CUSTOM TRAININGS

If your company or water utility staff would like a custom training on standards, testing, certification or any other areas where NSF can be of assistance, contact us at [info@nsf.org](mailto:info@nsf.org).

We can arrange an in-person or web-based training tailored to your needs.



# Know Your Local Drinking Water Requirements



**Article by Theresa Bellish**  
General Manager  
Municipal Water Products



In the U.S., states have primacy for compliance and enforcement of the federal Safe Drinking Water Act (SDWA) to protect public health (related to drinking water) and they carry this out through individual state regulations. The majority of state drinking water programs are located within state departments of health, environment and/or natural resources.

This group of drinking water administrators from the 50 U.S. states, the five U.S. territories, the Navajo Nation and the District of Columbia belong to a professional association serving state drinking water programs that was founded in 1984<sup>1</sup>. The Association of State Drinking Water Administrators, more commonly referred to as ASDWA, supports states in their efforts to protect public health by collecting and providing information that assists administrators in the fulfillment of their duties. ASDWA promotes the adoption of responsible and feasible drinking water program requirements at the state and federal levels.

NSF International works with ASDWA and attends the organization's annual conference each year to interact with state administrators on topics which include:

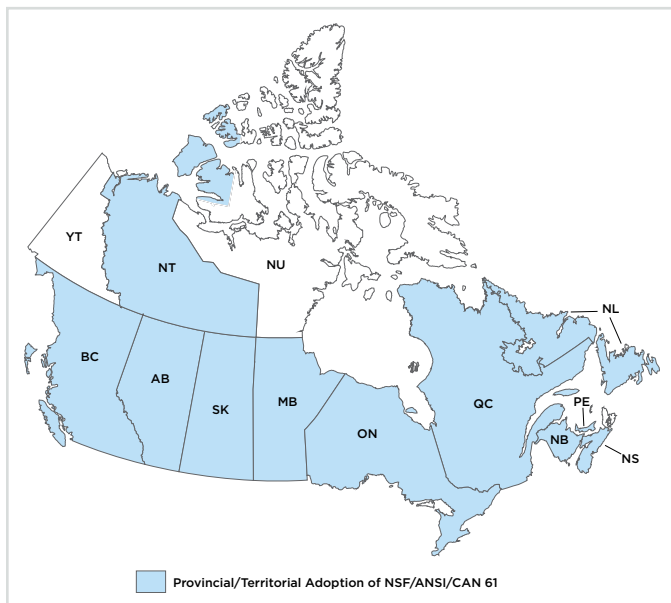
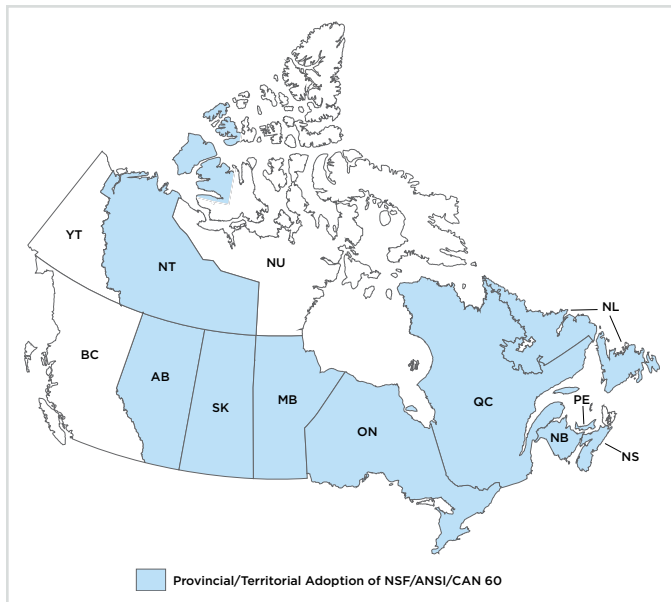
- Municipal water regulations
- New changes to requirements
- Continued collaboration to support public health and safe drinking water

## ASDWA Survey of Standard Adoption

In cooperation with ASDWA, NSF International conducts a survey of its state member agencies on their recognition of NSF/ANSI/CAN 60: *Drinking Water Treatment Chemicals - Health Effects* and NSF/ANSI/CAN 61: *Drinking Water System Components - Health Effects* in establishing specifications for water supply products. On an annual basis, NSF compiles this information and publishes a document titled, "Survey of ASDWA Members on the Use of NSF/ANSI Standards."

This document is intended to be used by consumers, municipalities and utilities, engineers and specifiers to quickly understand a state's requirements for





This information is also displayed with color coded maps and a detailed table of information.

If you are specifying a municipal bid or looking to purchase products used in a drinking water treatment facility or distribution system, referencing and understanding the requirements of your state is vital.

The NSF/ASDWA survey is one option for you to find the information that you are looking for, and the ASDWA website contains links to each of its primacy agency members' web pages where you can access each state's full requirements ([bit.ly/2I7GDn2](https://bit.ly/2I7GDn2)).

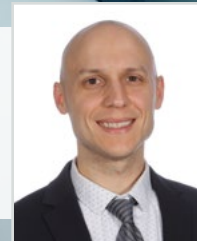
Manufacturers that obtain certification for their chemicals under NSF/ANSI/CAN 60 or their distribution system products under NSF/ANSI/CAN 61 go through a rigorous process that includes formulary reviews, product testing, facility inspection and documentation requirements. These activities occur initially (prior to certification) and also on an ongoing annual monitoring basis over time. This ongoing monitoring ensures that certified products continue to meet the requirements of the standards and provides verification that no harmful levels of contaminants are leaching out of the product, when the product is used under the certified parameters in the drinking water system. Products that have not undergone the rigorous process of third-party certification cannot make those independent, validated claims. ■

## QUICK LINKS

- Current NSF/ASDWA survey: [bit.ly/2U4XHeW](https://bit.ly/2U4XHeW)
- ASDWA drinking water primacy agencies: [bit.ly/2I7GDn2](https://bit.ly/2I7GDn2)
- Certification vs. compliance explanation: [bit.ly/2I5X08I](https://bit.ly/2I5X08I)
- Health Canada: [bit.ly/2D1CxsE](https://bit.ly/2D1CxsE)



**Article by David Nance**  
Business Unit Manager, Municipal &  
Recreational Water Products



# Frequently Asked Questions:

## Certified Components vs. End Products

### State drinking water legislation

requires equipment and products in contact with drinking water, from source to tap, to meet health and safety standards, including certification to NSF/ANSI/CAN 61. The certification of a finished product incorporates the evaluation and testing of all the included components, but the end-product certification does not extend to the components themselves.

In other words, components are not certified individually via testing of an end product. For example, if a peristaltic chemical pump is granted NSF/ANSI/CAN 61 certification, that does not mean the tubing used is by default also certified on its own.

Components seeking certification must go through the same rigorous technical review, production facility audit and extraction testing as certified finished products. Once completed, the component itself can bear the NSF mark to show certification to the appropriate standard.

In this article, we'll cover some of the common questions we get about component certification.

### What are some examples of certified components?

- O-rings
- Gaskets
- Pump mechanical seals
- Concrete aggregate
- And more

### If an end product needs a separate certification, why do component manufacturers also seek certification?

Component certification provides:

- Improved acceptance as replacement parts by authorities having jurisdiction (AHJs)/regulators by verifying the components meet the most rigorous health requirements of NSF/ANSI/CAN 61 on their own
- Improved product quality, as certification can catch unknown supply chain changes
- Differentiation over other products
- A step toward end-product certification

(continued...)

## Does an end product made up of mostly (or all) certified components have to go through the same testing as an end product made up of no individually certified components?

All certified products, whether a component or final end product, go through a rigorous technical review to ensure the finished product meets the health effects requirements of NSF/ANSI/CAN 61 on its own. That review determines the testing required and what compounds are of concern. Using components certified by NSF may impact that because we have already evaluated and tested those components.

### Why should utilities look for certified components?

- An OEM replacement part isn't always readily available.
- Certified components have potentially easier acceptance from AHJs when seeking replacement components.

## How can I differentiate between a certified component and a certified end product in the NSF listings?

All certified materials, components and end products appear in the official online NSF certification listings. While we don't specifically designate items as components in the listings, our online product listings can be searched in many ways. The best method of searching for a component, if you don't already have a manufacturer or trade name selected, is by the product type you need (material, O-ring, adhesive, etc.).

### Are the NSF certification marks different for certified components vs. end products?

The NSF mark for components and end products certified by NSF International to NSF/ANSI/CAN 61 is the same, except in the case of point-of-entry components, which use a specific NSF component mark. These are shown below. ■

**MOST COMPONENTS CERTIFIED TO NSF/ANSI/CAN 61 BEAR THIS STANDARD CERTIFICATION MARK:**



Certified to  
NSF/ANSI 61

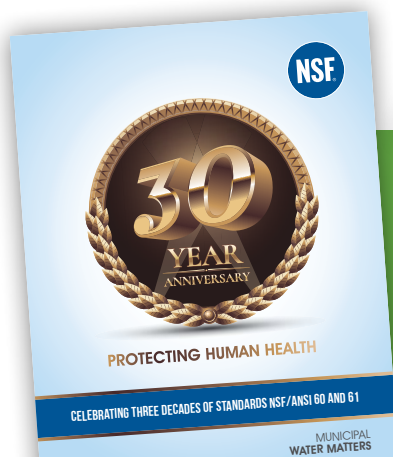
**POINT-OF-ENTRY COMPONENTS ARE AN EXCEPTION TO THIS RULE AND TYPICALLY BEAR A SPECIFIC NSF COMPONENT MARK:**



Certified to  
NSF/ANSI Standard 61 for  
materials requirements only.

**COMPONENT**

Over the next five years, these marks will be slightly updated to reflect the new standard name of "NSF/ANSI/CAN 61." Products bearing the mark with "NSF/ANSI 61" or "NSF/ANSI/CAN 61" have equal meaning.



## Want a detailed article on replacement components?

Check out Municipal Water Matters 2018:  
[bit.ly/2wh1Z9J](http://bit.ly/2wh1Z9J)





IN 2019, NSF INTERNATIONAL IS

# CELEBRATING 75 YEARS

**of protecting and improving human health.**

Our independent, global organization facilitates standards development, and tests, audits and certifies products for the food, water, health sciences, and consumer goods industries to minimize adverse health effects and protect the environment.

With operations in more than 175 countries, NSF is committed to protecting human health and safety worldwide. NSF International is a Pan American Health Organization/World Health Organization (WHO) Collaborating Center on Food Safety, Water Quality and Indoor Environment.

[www.nsf.org](http://www.nsf.org)



# NSF/ANSI/CAN 60 and FIFRA: Scope Clarifications

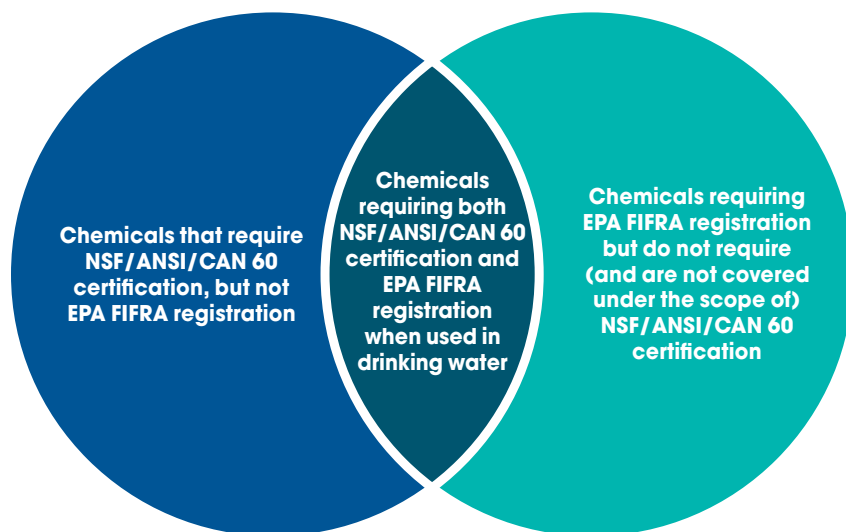
Fact sheet for chemicals used in water treatment as disinfectants, algicides, bactericides, biocides and molluscicides.



**Article by Blake Stark**  
General Manager  
Treatment Chemicals and Media

**We've received many questions regarding the scope** of NSF/ANSI/CAN 60 certification, and the U.S. EPA's Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Certain categories of water treatment chemicals fall within the scope of both programs. This fact sheet provides information on the applicable certifications and/or registrations which are required for water treatment chemicals.



- Aluminum sulfate (Alum)
- Polyaluminum chloride (PAC)
- Sodium carbonate (Soda Ash)
- Sodium silicate
- Calcium oxide (quicklime)

- Chlorine
- Sodium hypochlorite (bleach)
- Calcium hypochlorite
- Copper sulfate

- Fungicide chemicals
- Herbicide chemicals
- Insecticide chemicals
- Rodenticide chemicals
- Other agricultural pesticide chemicals used to prevent the effectivity of pests on the growth and productivity of crops

*These are examples and not an exhaustive list of chemicals.*

## NSF/ANSI/CAN 60

Product certification to NSF/ANSI/CAN 60: *Drinking Water Treatment Chemicals – Health Effects* is required in most U.S. states and Canadian provinces and territories, and serves as an important tool to ensure the safety and suitability of chemicals used in the treatment of public drinking water supplies. This standard includes minimum requirements for the control of potential adverse health effects from chemicals (or associated contaminants within chemicals) added to water through its treatment, storage and distribution.

NSF/ANSI/CAN 60 was developed in 1988 at the request of the U.S. EPA Office of Water by a consortium of water supply stakeholder groups, including the American Water Works Association (AWWA) and the Association of State Drinking Water Administrators (ASDWA).

## U.S. EPA FIFRA

FIFRA is the federal regulation that governs the registration, distribution, sale and use of pesticides in the U.S.<sup>2</sup> The primary objective of FIFRA is to ensure that, when applied as instructed, pesticides will not generally cause unreasonable risk to human health or the environment. The EPA defines a pesticide as any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest or intended for use as a plant regulator, defoliant, desiccant or nitrogen stabilizer.

Pesticide products, such as disinfectants, fall under the scope of FIFRA and require registration by the product manufacturer or distributor. Registration requires the chemical manufacturer to submit all requested applications and use instructions for the pesticide product to the EPA Office of Pesticides, as well as chemical information and safety data. The FIFRA registration program includes chemical label registration as well as monitoring of other parameters such as warning label information and product efficacy claims.

## Important Similarities & Differences

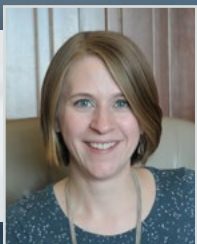
The differences in scope between NSF/ANSI/CAN 60 and FIFRA can be hard to navigate, since there are chemicals that fall within the scope of both. What's important to note is that the requirements of NSF/ANSI/CAN 60 and FIFRA are independent of one another, although both may apply to the same water treatment chemical product. In other words, FIFRA registration is not a requirement or pre-requisite of NSF/ANSI/CAN 60 for any chemical, and vice versa.

Location also plays a role – NSF/ANSI/CAN 60 addresses human health effects (exclusively) and is referenced globally as a standard for drinking water treatment chemicals, whereas the FIFRA requirements apply only to chemicals used in the U.S. Thus, based on where the chemical supplier is manufacturing, distributing, and selling its product, many chemicals are required by drinking water regulations to have both NSF/ANSI/CAN 60 certification and FIFRA registration. ■

2 <https://www.epa.gov/laws-regulations/summary-federal-insecticide-fungicide-and-rodenticide-act>



# Treatment Chemical Contact Products: Section 5 & Section 8 Listing Differences



**Article by Kathryn Foster**  
Technical Operations Manager  
Water Distribution Systems

While best known as the health effects standard for potable water, the scope of NSF/ANSI/CAN 61 also covers materials or products that come in contact with drinking water treatment *chemicals*.

This is important because contaminants that leach into drinking water treatment chemicals may then be inadvertently dosed into drinking water and eventually end up at a consumer's tap, creating the potential for adverse health effects.

The drinking water treatment chemical-contacting products that are most typically certified under NSF/ANSI/CAN 61 include:

- On-site chemical generators
- Chemical feeders and metering pumps
- Chemical storage tanks

These product types all fall under **Section 8** of the standard and must be tested with the drinking water treatment chemical or mixture of chemicals to which they are exposed in the field.

For example, complete chemical generation devices are tested by operating the device per the manufacturer's instructions until the target dose level of chemical is achieved. The unit is then turned off for a four-hour period. Then the unit is powered back on, and a sample of chemical equivalent to the system volume is collected. Components of chemical generators, chemical feeders, chemical metering pumps and chemical storage tanks are tested via a four-hour static exposure of the product's chemical contact surfaces with the appropriate chemical or chemical mixture.

Leaching profiles from materials in contact with drinking water treatment chemicals can differ significantly when compared to the same materials in contact with other chemicals or potable water. For this reason, water treatment chemical contact products are certified and listed for use with specific chemical types and concentrations.

For products that may contact multiple different types of water treatment chemicals, such as chemical metering pumps and chemical storage tanks, the manufacturer

must provide a complete list of chemicals with which they'd like their product evaluated. Use with any water treatment chemical other than those shown in the product listing are not covered by the scope of the certification. Similarly, tanks listed for storage of potable water under **Section 5** of the standard have not been evaluated for use in chemical storage unless specifically indicated in a separate, Section 8 listing for chemical storage.

## How do I differentiate these products in the NSF listings?

The mockups below show how the same product can be certified under Section 5 and Section 8 of NSF/ANSI/CAN 61 in NSF's official certification listings. The listings for chemical evaluation (Section 8) and potable water (Section 5) are **separate**, even if the same product is being evaluated. ■

### Section 8 Listing

| NSF/ANSI/CAN 61 Section 8 Listing<br>for Contact with Drinking Water Treatment Chemicals  |         |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
|---|---------|--------------------|------------------------|----------|---|------------------|----|--------------------|----|-----------------|----|-------------------|----|-------------------|----|-------------------|----|-------------------|----|-------------------|----|-----------------|----|------------------------|----|------------------|----|---------------------|------|---------------------|----|
| <b>ABC Company</b><br>100 Example Road<br>Somewhere Town, MI 12345<br>United States<br>555-555-5555<br><a href="#">Visit this company's website</a><br>Facility: Somewhere Town, MI   |         |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Mechanical Devices  |         |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Trade Designation   | Size    | Water Contact Temp | Water Contact Material |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| <b>Chemical Storage Tanks [6] [G]</b>   |         |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Example Model No. 12345   | 50 gal. | CLD 23             | MLTPL                  |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| <p>[6] Certification for use with the following chemicals. These products are evaluated by diluting the exposed water treatment chemicals to the typical use level (TUL), as defined by NSF/ANSI Standard 60.</p> <table border="1"> <tbody> <tr><td>Chemical</td><td>4</td></tr> <tr><td>Aluminum Sulfate</td><td>50</td></tr> <tr><td>Ammonium Hydroxide</td><td>28</td></tr> <tr><td>Ferric Chloride</td><td>45</td></tr> <tr><td>Fluosillicic Acid</td><td>23</td></tr> <tr><td>Hydrochloric Acid</td><td>28</td></tr> <tr><td>Hydrochloric Acid</td><td>30</td></tr> <tr><td>Hydrochloric Acid</td><td>38</td></tr> <tr><td>Hydrogen Peroxide</td><td>50</td></tr> <tr><td>Phosphoric Acid</td><td>50</td></tr> <tr><td>Potassium Permanganate</td><td>10</td></tr> <tr><td>Sodium Bisulfite</td><td>44</td></tr> <tr><td>Sodium Hypochlorite</td><td>12.5</td></tr> <tr><td>Sodium Hypochlorite</td><td>15</td></tr> </tbody> </table> <p>[G] Product is Certified to NSF/ANSI 372 and conforms with the lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act.</p> |         |                    |                        | Chemical | 4 | Aluminum Sulfate | 50 | Ammonium Hydroxide | 28 | Ferric Chloride | 45 | Fluosillicic Acid | 23 | Hydrochloric Acid | 28 | Hydrochloric Acid | 30 | Hydrochloric Acid | 38 | Hydrogen Peroxide | 50 | Phosphoric Acid | 50 | Potassium Permanganate | 10 | Sodium Bisulfite | 44 | Sodium Hypochlorite | 12.5 | Sodium Hypochlorite | 15 |
| Chemical  | 4       |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Aluminum Sulfate  | 50      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Ammonium Hydroxide  | 28      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Ferric Chloride   | 45      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Fluosillicic Acid   | 23      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Hydrochloric Acid   | 28      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Hydrochloric Acid   | 30      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Hydrochloric Acid   | 38      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Hydrogen Peroxide   | 50      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Phosphoric Acid   | 50      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Potassium Permanganate  | 10      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Sodium Bisulfite  | 44      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Sodium Hypochlorite   | 12.5    |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |
| Sodium Hypochlorite   | 15      |                    |                        |          |   |                  |    |                    |    |                 |    |                   |    |                   |    |                   |    |                   |    |                   |    |                 |    |                        |    |                  |    |                     |      |                     |    |

### Section 5 Listing

| NSF/ANSI/CAN 61 Section 5 Listing<br>for Contact with Potable Water  |         |                    |                        |
|--|---------|--------------------|------------------------|
| <b>ABC Company</b><br>100 Example Road<br>Somewhere Town, MI 12345<br>United States<br>555-555-5555<br><a href="#">Visit this company's website</a><br>Facility: Somewhere Town, MI  |         |                    |                        |
| Protective (Barrier) Materials   |         |                    |                        |
| Trade Designation  | Size    | Water Contact Temp | Water Contact Material |
| <b>Tank [G]</b>  |         |                    |                        |
| Example Model No. 12345  | 50 gal. | CLD 23             | MLTPL                  |
| <p>Certification does not include any tank accessories.</p> <p>[G] Product is Certified to NSF/ANSI 372 and conforms with the lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act.</p> |         |                    |                        |

## QUESTIONS ABOUT CERTIFIED PRODUCTS?

For questions about certified products, contact NSF International at [info@nsf.org](mailto:info@nsf.org) or +1 800 673 8010.

To find products certified by NSF International, visit our official certification listings:

[www.nsf.org/certified-products-systems](http://www.nsf.org/certified-products-systems)



# Ductile Iron Pipe and Fittings: The Scope of Associated Product Standards

Ductile iron pipe and fittings have been used in water distribution and wastewater systems for decades. NSF International has been certifying ductile iron pipe and fittings for use in drinking water distribution systems for years, and it's important to understand the scope of these standards and their associated certifications to choose products that meet your state and local regulations.

Certifications available to this group of products include:

- NSF/ANSI/CAN 61: *Drinking Water System Components - Health Effects*
- NSF/ANSI 372: *Drinking Water System Components - Lead Content*
- ANSI/AWWA C115 - *Flanged Ductile Iron Pipe*
- ANSI/AWWA C606 - *Grooved and Shouldered Joints*

## NSF/ANSI/CAN 61


NSF/ANSI 61/CAN certification covers materials and products that come in contact with drinking water or drinking water treatment chemicals, from source to tap. Certification to this standard ensures that the material or product does not impart contaminants above acceptable limits into potable water.

As such, while ductile iron pipes typically are coated internally and externally, NSF/ANSI/CAN 61 only addresses those surfaces normally in contact with the drinking water, and as a result the external pipe coatings are not addressed through this certification. Pipe and fittings certified by NSF meet the requirements set by state and provincial drinking water regulatory agencies in 49 U.S. states and 11 Canadian provinces/territories with requirements for NSF/ANSI/CAN 61 for municipal drinking water applications.

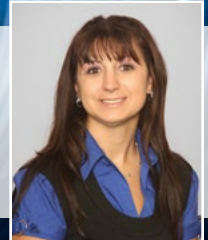
## NSF/ANSI 372

NSF/ANSI 372 certification covers any drinking water system component that conveys or dispenses water for human consumption through drinking or cooking. This standard addresses the lead content based on the wetted surface areas of the product and contains criteria set forth in the Safe Drinking Water Act (SDWA) of the United States. Ductile iron pipe, fittings and components that are certified to this standard meet the weighted average lead content requirement of less than or equal to 0.25 percent.





**Article by Theresa Bellish**  
General Manager  
Municipal Water Products



### ANSI/AWWA C115

The ANSI/AWWA C115 standard pertains to flanged ductile iron pipe 3-64 inches in diameter with threaded flanges for water supply. NSF International offers an audit-based certification to this standard, which includes ensuring that the pipe barrels conform to AWWA C115, verification of wall thickness, multiple requirements related to the flanges and bolts, finishes, cutting oil, pipe threading, pipe cleaning and marking and dimensioning.

### ANSI/AWWA C606

ANSI/AWWA C606 addresses grooved and shouldered pipe joints for grooved ductile iron pipe 4-36 inches in diameter and 4-64-inch nominal diameter shoulder ends for ductile iron pipe. This standard provides minimum requirements that include materials, dimensions, tolerances, finishes, tests and testing procedures. NSF International offers an audit-based certification to this standard which addresses the minimum requirements of the standard. It is important to note that this standard does address the gaskets used, but it does not cover hydrostatic rating requirements for couplings or joints under section 5.2.

### National Association of Pipe Fabricators' NAPF QualityPlus!™

NSF also serves as the independent third-party certifier for the National Association of Pipe Fabricators' NAPF QualityPlus!™ Certification Program. NSF provides certifications to NAPF's members for the standards mentioned in this article. The National Association of Pipe Fabricators is a non-profit organization that was formed in 1977 and brings together ductile iron pipe fabricators, vendors and distributors to promote, support and educate members on industry standards, trends and guidelines. ■



**LEARN MORE ABOUT THESE!**

NSF/ANSI/CAN 61: [bit.ly/2X80VPn](https://bit.ly/2X80VPn)

NSF/ANSI 372: [bit.ly/30QVM2s](https://bit.ly/30QVM2s)

ANSI/AWWA C606: [bit.ly/2wlKnJZ](https://bit.ly/2wlKnJZ)

NAPF QualityPlus!™: [bit.ly/2Xd2IEG](https://bit.ly/2Xd2IEG)



# Sodium Hypochlorite:

Commercial Bleach (NSF/ANSI/CAN 60)  
& On-Site Generated Bleach (from  
NSF/ANSI/CAN 61 Certified Generator)

Water utilities that use sodium hypochlorite for drinking water disinfection have the option of using bleach sourced from a chemical vendor (commercial bleach) or producing bleach on-site through use of a chemical generator.

Read on for a summary of the NSF/ANSI/CAN standards that apply under each option.



**Article by Blake Stark**  
General Manager  
Treatment Chemicals and Media

## Commercial Bleach for Drinking Water Treatment

Chemicals, including hypochlorite bleach, which are transported to utilities for use in drinking water treatment fall under the scope of NSF/ANSI/CAN 60: *Drinking Water Treatment Chemicals - Health Effects*. Information on the NSF/ANSI/CAN testing and evaluation parameters for sodium hypochlorite

products can be found in the 2016 edition of *Municipal Water Matters*.

The NSF/ANSI/CAN 60 product certification listings for sodium hypochlorite products can be found by following the instructions found below.

► [info.nsf.org/Certified/PwsChemicals](http://info.nsf.org/Certified/PwsChemicals)

The image displays three sequential screenshots of the NSF website's search interface. The first screenshot shows the search form with a dropdown menu for 'Chemical Name' open, listing various chemicals including Sodium Hypochlorite. The second screenshot shows the search results page for Sodium Hypochlorite, with the 'Search' button highlighted. The third screenshot shows the detailed product listing for ABC Company, including contact information and a table of product functions and designations.

The NSF/ANSI/CAN 60 sodium hypochlorite certifications apply to the bleach products that appear in the NSF listings of each certified bleach production facility. Routine site audits of and testing and evaluation of products from each facility take place in support of the NSF/ANSI/CAN 60 bleach product certifications.

(continued...)

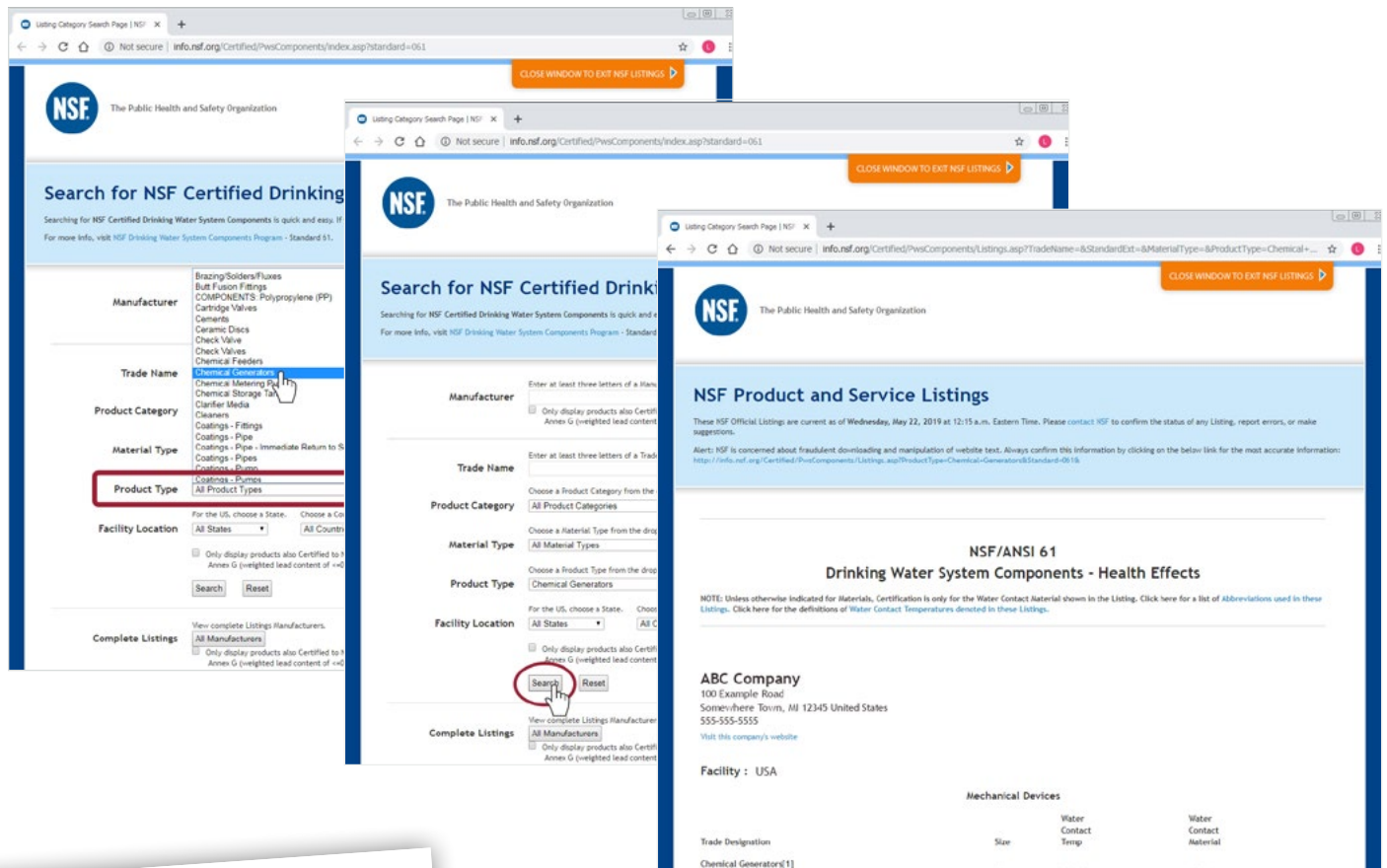


## On-site Generated Bleach for Drinking Water Treatment

Many water utilities manufacture sodium hypochlorite through on-site generators (in lieu of, or in addition to, purchased bleach). On-site generators, including hypochlorite bleach generators, fall under the scope of

NSF/ANSI/CAN 61: *Drinking Water System Components - Health Effects*. The NSF/ANSI/CAN 61 product certification listings for chemical generators can be found by following the instructions found below.

▶ [info.nsf.org/Certified/PwsComponents/index.asp?standard=061](http://info.nsf.org/Certified/PwsComponents/index.asp?standard=061)



**Want more information about NSF/ANSI/CAN 60 evaluation parameters for electrochlorination salt? Check out Municipal Water Matters 2016 here: [bit.ly/2wovTcb](http://bit.ly/2wovTcb)**

## Always “Take Note” of the Footnotes!

The associated footnotes shown in each of the chemical generator listings designate the chemical effluent produced from the certified generator (example: sodium hypochlorite for bleach generators).

The NSF/ANSI/CAN 61 chemical generator certifications apply to the generators that appear in the NSF listings of each certified facility. Routine site audits of the generator assembly facility are conducted and testing and evaluation of effluent chemical from a representative generator take place in support of the NSF/ANSI/CAN 61 chemical generator certifications. The effluent chemical sample, used for product analysis, is prepared by NSF International after operating the generator in accordance with the manufacturer’s published instructions.

It is important for on-site producers of treatment chemicals to follow the manufacturer’s use instructions closely, to ensure that the effluent chemical produced meets established specifications. One key component of the manufacturer’s use instructions is the designated feed stock chemical(s) that are specified for use in the certified generator. For example, many sodium hypochlorite generator instructions specify that an NSF/ANSI/CAN 60-certified salt should be used as the generator feed stock.

The NSF/ANSI/CAN 60 product certification listings for sodium chloride salt can be found following the instructions found below.

► [info.nsf.org/Certified/PwsChemicals](http://info.nsf.org/Certified/PwsChemicals)

The screenshot displays the NSF website interface for searching certified chemicals. The search results for Sodium Chloride are highlighted, and the product listing for ABC Company is shown with its details and footnotes.

**NSF Product and Service Listings**

These NSF Official Listings are current as of Wednesday, May 22, 2019 at 12:15 a.m. Eastern Time. Please contact NSF to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information: <http://info.nsf.org/Certified/PwsChemicals/Listings.asp?ChemicalName=Sodium-Chloride>

**NSF/ANSI 60**  
**Drinking Water Treatment Chemicals - Health Effects**

**ABC Company**  
100 Example Road  
Somewhere Town, MI 12345 United States  
555-555-5555  
Visit this company's website

**Facility : USA**

| Trade Designation      | Product Function | Max Use |
|------------------------|------------------|---------|
| Sodium Chloride[1] [2] | Other            | NA      |
| Sodium Chloride-Salt   | Softener         | NA      |

[1] Certified for use in the electrochlorination process for on-site disinfectant generators as well as softener resin regeneration.  
[2] For electrolytic sodium hypochlorite generator use of this product, the maximum disinfectant feed concentration shall not exceed 2.8 mg Cl<sub>2</sub>/L. This requirement limits bromate production in the effluent sodium hypochlorite and is based on the bromide concentration in the salt.

## Salt Products Certified for Electrochlorination End Use

The certification listings for salt products that have been certified for the electrochlorination end use have a footnote in their listings stating, “Certified for use in the electrochlorination process for on-site disinfectant generators.” In addition, the listing footnotes specify the maximum disinfectant feed concentration of the salt that has been established as part of the use restrictions of the salt product.

If you have questions about certified bleach products, please contact NSF’s consumer and regulatory hotline at **+1 800 673 8010** or [info@nsf.org](mailto:info@nsf.org). ■

# About the Authors



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Blake Stark is the General Manager of NSF's Treatment Chemicals and Filtration Media programs and works with NSF's global testing, auditing and certification of these products. Stark has worked as a key member of the NSF International staff for over 25 years, holding important roles in the water treatment area and, before that, serving as an NSF product auditor on the Field Services team.



## **David Nance**

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David Nance is the Business Unit Manager for NSF International's Municipal Water Products and Recreational Water Products and works with NSF's global testing, auditing and certification services for distribution system components and recreational water products. Nance has nine years of experience in the Municipal Water Products program.



## **Kathryn Foster**

Technical Operations Manager, Water Distribution Systems

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Kathryn Foster is the Technical Operations Manager for Water Distribution Systems at NSF International. Foster has over 10 years of experience overseeing the evaluation of products to NSF/ANSI/CAN 61, and NSF/ANSI 372 and 50. She is the current voting member for NSF International on the Joint Committee on Drinking Water Additives with oversight of NSF/ANSI/CAN 61 and NSF/ANSI 372.



## **Theresa Bellish**

General Manager, Municipal Water Products

[bellish@nsf.org](mailto:bellish@nsf.org)

Theresa Bellish is the General Manager of NSF International's Municipal Water Products Division and works with NSF's global testing, auditing and certification services for drinking water treatment chemicals, distribution system components and recreational water products. Bellish has a long-standing career at NSF with over 19 years of experience in the water industry.



# Notes

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# CONTACT US

For more information, visit [www.nsf.org](http://www.nsf.org) or contact [info@nsf.org](mailto:info@nsf.org).



## NSF INTERNATIONAL

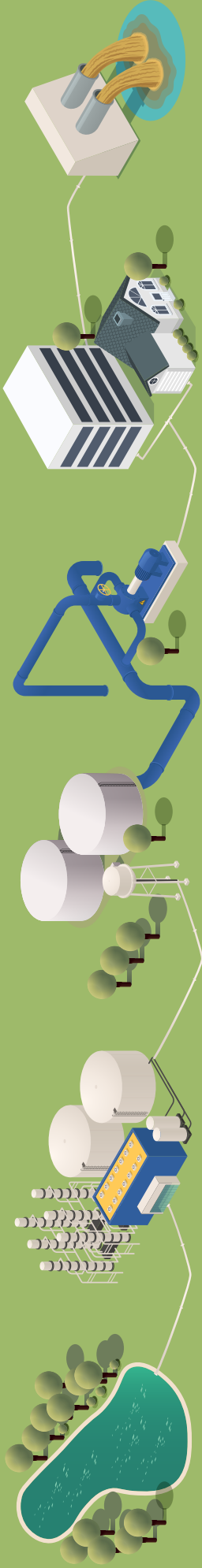
789 N. Dixboro Road Ann Arbor, MI 48105 USA

**T** +1 800 673 8010

**E** [info@nsf.org](mailto:info@nsf.org)

**www.nsf.org**

# PRODUCT STANDARDS & THE WATER SYSTEM



| SOURCE<br>(AQUIFER, LAKE, WELL, ETC)   | WATER TREATMENT<br>PLANT   | RESERVOIRS &<br>STORAGE TANKS  | DISTRIBUTION<br>SYSTEM  | HOMES &<br>BUSINESSES  | SEWER LINES &<br>COMMERCIAL WASTEWATER  |
|--|--|--|---|--|---|
| <b>NSF/ANSI/CAN 61</b><br>Intake grates<br>Well casings<br>Submersible pumps and motors<br><b>NSF/ANSI/CAN 60</b><br>Well drilling aids<br>Well rehabilitation aids<br>Algaecides<br>Disinfectants | <b>NSF/ANSI/CAN 61</b><br>Treatment tanks<br>Filter underdrains<br>Municipal water filters<br>Chemical generators<br>Chemical feeders and pumps<br>Chemical storage tanks<br>Filtration media<br><b>NSF/ANSI/CAN 60</b><br>Coagulants/flocculants<br>pH adjusters<br>Disinfectants<br>Corrosion and scale control<br>RO antiscalants<br>Fluoridation | <b>NSF/ANSI/CAN 61</b><br>Water storage tanks<br>Tank and reservoir liners<br>Tank coatings<br>Static mixers | <b>NSF/ANSI/CAN 61</b><br>Pipes and fittings<br>Valves<br>Fire hydrants<br>Pipe coatings<br><b>NSF/ANSI 14</b><br>Large diameter plastic pipe | <b>NSF/ANSI/CAN 61</b><br>Pipes and fittings<br>Water meters<br>Faucets and components<br>Point-of-entry filters<br><b>NSF/ANSI 14</b><br>Plastic pipe<br>Fittings for plastic pipe<br><b>NSF/ANSI 42 &amp; 53</b><br>Point-of-use filters<br>Filter pitchers<br>Refrigerator filters<br><b>NSF/ANSI 44</b><br>Water softeners | <b>NSF/ANSI 14</b><br>Drain, waste, vent pipe and fittings<br>CIPP liners for sewer |

**Note:** This infographic is a quick-reference guide and is not a comprehensive list of all products. **Have questions?** Email us at [info@nsf.org](mailto:info@nsf.org).



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