



WATER QUALITY SYSTEM STANDARDS

NSF is the industry's most trusted resource for the testing and certification of filtration systems and components for drinking water and recreational water used in residential, commercial and municipal applications. Our custom-built laboratories have specialized test rigs for dosing and analyzing system performance and component integrity for removal of organic, inorganic, particulate and microbial contaminants.

No matter what type of water filtration or treatment products you manufacture, NSF's thorough evaluation and testing capabilities help ensure quality in the results. Our high-tech laboratories tightly monitor and control water pressure, influent concentration, flow rate and other testing characteristics. We are committed to improving water quality for public use and consumption.

NSF's laboratories provide a distinct advantage to our clients with the capability of performing all evaluation and testing services in-house with our resident microbiology, chemistry, toxicology and engineering experts.

Laboratory Features

- > Complete engineering and performance testing laboratories with polymer processing and analytical capacity
- > State of the art, computer controlled test rigs for all types of POU / POE contaminant reduction testing
- > Unique chemistry laboratory with specialized exposure, testing and analysis infrastructure
- > Full microbiological laboratory with specialized organism culturing, dosing, testing, and detection methods, including MS2, Poliovirus, Rotavirus, Pseudomonas, E. Coli, Fr and others
- > Unrivaled toxicology risk assessment experience and determination services
- > Unique ability to test particulate, contaminant and pathogen removal claims at flows up to 6,000 GPM or 8.6 MGD

FILTRATION STANDARDS

NSF/ANSI 42: DRINKING WATER TREATMENT UNITS - AESTHETIC

EFFECTS STANDARD The scope of NSF/ANSI 42 is to establish the minimum requirements for material safety, structural integrity, product literature, and aesthetic, non-health related contaminant reduction performance claims. The most popular claims are chlorine reduction and particulate reduction. The most common technology addressed by NSF/ANSI 42 is carbon filtration, and the standard includes both point-of-entry (POE) and point-of-use (POU) products.

NSF/ANSI 44: RESIDENTIAL CATION EXCHANGE WATER SOFTENER

STANDARD establishes minimum requirements for the certification of residential cation exchange water softeners. The scope of NSF/ANSI 44 includes material safety, structural integrity, accuracy of the brine system, product literature, and the reduction of hardness and the reduction of specific contaminants from a known quality water source. The most popular claims made under NSF/ANSI 44 are barium reduction, radium 226/228 reduction and softener performance.

NSF/ANSI 53: DRINKING WATER TREATMENT UNITS - HEALTH EFFECTS

STANDARD establishes minimum requirements for material safety, structural integrity, product literature, and health related contaminant reduction performance claims such as lead, cyst, and VOC reduction, among many others. The most common technology addressed by NSF/ANSI 53 is carbon filtration, and the standard includes both POE and POU products. Some products fall under the scope of both NSF/ANSI 42 and 53 because they claim a combination of aesthetic and health claims.

NSF/ANSI 55: ULTRAVIOLET MICROBIOLOGICAL WATER TREATMENT

SYSTEMS STANDARD establishes minimum requirements for the certification of ultra-violet (UV) systems. The scope of NSF/ANSI 55 includes material safety, structural integrity, product literature, and UV performance. UV systems are categorized either as Class A (delivers minimum 40 mJ/cm² UV dose and has an alarm) or Class B (delivers minimum 16 mJ/cm²). Systems may be POE or POU. Class A systems may claim to disinfect water that may be contaminated with pathogenic bacteria, viruses, Cryptosporidium, or Giardia. Class B systems may claim to reduce normally occurring nuisance microorganisms.

NSF/ANSI 58: REVERSE OSMOSIS DRINKING WATER TREATMENT SYSTEMS STANDARD establishes minimum requirements for the certification of POU reverse osmosis systems. The scope of NSF/ANSI 58 includes material safety, structural integrity, product literature, total dissolved solids (TDS) reduction, and additional contaminant reduction claims. These additional contaminant reduction claims may include cyst reduction, barium reduction, radium 226/228 reduction, copper reduction, hexavalent and trivalent chromium reduction, arsenic reduction, nitrate/nitrite reduction, cadmium and lead reduction.

NSF/ANSI 401: DRINKING WATER TREATMENT UNITS – EMERGING COMPOUNDS/INCIDENTAL CONTAMINANTS STANDARD establishes the minimum requirements for materials, design and construction, and performance of drinking water treatment systems that are designed to reduce emerging compounds in public or private water supplies, such as pharmaceutical, personal care products (PPCPs), and endocrine disrupting compounds (EDCs).

NSF P477: MICROCYSTIN REDUCTION PROTOCOL establishes the minimum requirements for materials, design and construction, and performance of point-of-use activated carbon drinking water treatment systems that are designed to reduce specific microcystins in public water supplies.

NSF P231: MICROBIOLOGICAL WATER PURIFIERS PROTOCOL establishes minimum requirements for health and sanitation characteristics of microbiological water purifiers. The requirements are based on the recommendations of the U.S. Environmental Protection Agency's Task Force Report, Guide Standard and Protocol for Testing Microbiological Water Purifiers.

NSF P248: MILITARY OPERATIONS MICROBIOLOGICAL WATER PURIFIERS PROTOCOL evaluates individual small water purifiers (SWPs) to determine their effectiveness in providing microbiological purification to water from any fresh water source. SWPs tested using this protocol are intended for individual or squad-size use for emergency or short-term planned missions. This protocol does not test or verify claims of chemical contaminant removal efficiencies.

Why work with NSF?

- > Our capabilities extend to include full chemical, microbiological and physical testing.
- > The NSF mark is recognized and respected by health officials and consumers as a symbol of product quality and integrity.
- > Our staff includes experienced toxicologists, chemists and engineers.

For additional information about these standards and protocols, or NSF certification, please contact americas@nsf.org.

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