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NSF/ANSI 42-2023

Drinking Water Treatment Units - Aesthetic Effects

Approved American National Standard
ANSI

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NSF International Standard /
American National Standard
for Drinking Water Treatment Units –

Drinking Water Treatment Units – Aesthetic Effects

Standard Developer
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Abbreviations

The following tables are provided as a reference for unit abbreviations for common forms of measurement used within NSF documents.

time	second	s
	minute	min
	hour	h
	day	d
	week	wk
	month	mo
	year	yr
length	inch	in
	foot	ft
	yard	yd
	micrometer	µm
	nanometer	nm
	millimeter	mm
	centimeter	cm
	meter	m
	kilometer	km
liquid measure	milliliter	mL
	liter	L
	liters per day	LPD
	liters per minute	LPM
	ounce	oz
	pint	pt
	quart	qt
	gallon	gal
	gallons per minute	GPM
	gallons per day	GPD
weight	microgram	µg
	picogram	pg
	nanogram	ng
	milligram	mg
	centigram	cg
	gram	g
	kilogram	kg
	pound	lb
	ton	t
	metric ton	mt

miscellaneous	atomic mass unit	amu
	valve flow coefficient	Cv
	Daltons	Da
	kilopascals	kPa
	mass-to-charge ratio	m/z
	molecular weight	MW
	pounds per square inch	psi
	pounds per square inch gauge	psig
	weight for weight	w/w

Contents

Foreword[2]

The purpose of this standard is to establish minimum requirements for materials, design, construction, and performance of drinking water treatment units that are designed to reduce specific aesthetic-related contaminants in public or private water supplies. This standard specifies the minimum product literature and labeling information that a manufacturer must supply to authorized representatives and system owners. Lastly, this standard provides minimum service-related obligations that the manufacturer must extend to system owners.

This edition of the standard contains the following revisions:

Issue 124

This revision adds test protocols for pour through and batch treatment systems with influent reservoirs that hold more volume than the effluent reservoir, or that require multiple drain events to treat a single influent reservoir volume.

Issue 127

This revision adds language in Section N-4.2 to allow the use of a mechanical filter prior to the test unit that does not impact the chemistry requirements of the standard.

Issue 129

This revision standardizes water temperatures for hydrostatic structural integrity testing as well as chemical reduction testing, including POE.

Issue 133

This revision clarifies treatment train options in Section N-5.1.

Issue 134

This revision updates the values in Table 4.3 for maximum reporting limits and maximum effluent concentrations for ethylbenzene, toluene, and xylenes.

The Interpretations Annex contains responses to interpretation requests. The responses will be published in each version of the standard until such time that the interpretation response is no longer applicable.

This standard was developed by the NSF Joint Committee on Drinking Water Treatment Units using the consensus process described by the American National Standards Institute.

This standard and the accompanying text are intended for voluntary use by certifying organizations, regulatory agencies, and/or manufacturers as a basis of providing assurances that adequate health protection exists for covered products.

Suggestions for improvement of this standard are welcome. This standard is maintained on a Continuous Maintenance schedule and can be opened for comment at any time. Comments should be sent to: Chair, Joint Committee on Drinking Water Treatment Units at standards@nsf.org, or c/o NSF International, Standards Department, P.O. Box 130140, Ann Arbor, Michigan 48113-0140, U.S.A.

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NSF/ANSI Standard
for Drinking Water Treatment Units –

Drinking Water Treatment Units – Aesthetic Effects

1 General

1.1 Purpose

It is the purpose of this standard to establish minimum requirements for materials, design and construction, and performance of drinking water treatment systems that are designed to reduce specific aesthetic related (nonhealth effects) contaminants in public or private water supplies. This standard also specifies the minimum product literature and labeling information that a manufacturer shall supply to authorized representatives and system owners as well as the minimum service-related obligations that the manufacturer shall extend to system owners.

1.2 Scope

The point-of-use (POU) and point-of-entry (POE) systems addressed by this standard are designed to be used for the reduction of specific substances that may be present in drinking water (public or private) considered to be microbiologically safe and of known quality. Systems covered under this standard are intended to address one or more of the following: reduce substances affecting the aesthetic quality of the water, add chemicals for scale control, or limit microbial growth in the system (bacteriostatic). Substances may be soluble or particulate in nature. It is recognized that a system may be effective in controlling one or more of these substances but is not required to control all. Systems with manufacturer claims that include components or functions covered under other NSF or NSF/ANSI standards or criteria shall conform to the applicable requirements therein. Filter systems covered by this standard are not intended to be used with drinking water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

> NOTE — Systems that are compliant with NSF/ANSI 55 Class A or other standards that cover technologies to treat microbiologically unsafe water (e.g., U.S. EPA *Guide Standard and Protocol for Testing Microbiological Water Purifiers*[5] or NSF P231) are examples of demonstrating adequate disinfection before or after the system.

1.3 Alternate materials, designs, and construction

While specific materials, designs, and construction may be stipulated in this standard, systems that incorporate alternate materials, designs, and construction may be acceptable when it is verified that such systems meet the applicable requirements stated herein.

1.4 Chemical and mechanical reduction performance claims

1.4.1 All NSF/ANSI 42 performance claims shall be verified and substantiated by test data generated under the requirements of NSF/ANSI 42.

1.5 When performance claims are made for substances not specifically addressed in the scope of this standard or for substances not specifically addressed but falling under the scope of NSF/ANSI 42, such claims shall be identified as not specifically addressed in the standard.