

NSF

NSF International Standard / American National Standard

NSF/ANSI 62 - 2021

Drinking Water Distillation Systems



NSF International, an independent, not-for-profit, nongovernmental organization, is dedicated to being the leading global provider of public health and safety-based risk management solutions while serving the interests of all stakeholders.

> This Standard is subject to revision. Contact NSF to confirm this revision is current.

Users of this Standard may request clarifications and interpretations, or propose revisions by contacting:

Chair, Joint Committee on Drinking Water Treatment Units c/o NSF International 789 North Dixboro Road, PO Box 130140 Ann Arbor, Michigan 48113-0140 USA Phone: (734) 769-8010 Fax: (734) 769-0109 Email: info@nsf.org Web: <<u>www.nsf.org</u>>

NSF/ANSI 62 - 2021

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

Drinking Water Distillation Systems

Standard Developer **NSF International**

Designated as an ANSI Standard May 20, 2021 American National Standards Institute

Prepared by The NSF Joint Committee on Drinking Water Treatment Units

Recommended for adoption by The NSF Council of Public Health Consultants

Adopted by NSF International March 1989

Revised November 1992 Addendum, June 2002 Revised August 2009 Revised January 2015 Revised November 2017 Revised August 2020 Revised September 1997 Revised February 2004 Revised February 2012 Revised October 2015 Revised November 2018 Revised November 2021 Revised September 1999 Revised October 2007 Revised December 2013 Revised November 2016 Revised March 2020

Published by **NSF International** PO Box 130140, Ann Arbor, Michigan 48113-0140, USA

For ordering copies or for making inquiries with regard to this Standard, please reference the designation "NSF/ANSI 62-2021."

Copyright 2021 NSF International

Previous editions © 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, 2009, 2007, 2004, 1999, 1997, 1992, 1989

Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from NSF International.

Printed in the United States of America.

ii

Disclaimers¹

NSF International (NSF), in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of NSF represent its professional judgment. NSF shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. NSF shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Standard. It is the responsibility of the user of this standard to judge the suitability of the ANS for the user's purpose.

NSF Standards provide basic criteria to promote sanitation and protection of public health and the environment. Provisions for mechanical and electrical safety have not been included in this Standard because governmental agencies or other national standards-setting organizations provide safety requirements.

Participation in NSF Standards development activities by regulatory agency representatives (federal, state, or local) shall not constitute their agency's endorsement of NSF or any of its Standards.

Preference is given to the use of performance criteria measurable by examination or testing in NSF Standards development when such performance criteria may reasonably be used in lieu of design, materials, or construction criteria.

The illustrations, if provided, are intended to assist in understanding their adjacent standard requirements. However, the illustrations may not include all requirements for a specific product or unit, nor do they show the only method of fabricating such arrangements. Such partial drawings shall not be used to justify improper or incomplete design and construction.

At the time of this publication, examples of programs and processes were provided for general guidance. This information is given for the convenience of users of this standard and does not constitute an endorsement by NSF International. Equivalent programs and processes may be used.

Unless otherwise referenced, the annexes are not considered an integral part of NSF Standards. The annexes are provided as general guidelines to the manufacturer, regulatory agency, user, or certifying organization.

¹ The information contained in this Disclaimer is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this Disclaimer may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

This page is intentionally left blank.

Contents

1	General1			
	1.1	Scope	1	
	1.2	Minimum requirements	1	
	1.3	Chemical and microbiological reduction performance claims	1	
	1.4	Treatment train		
	1.5	Reviews and revisions		
2	Normative references			
3	Defin	itions	2	
4	Mate	rials		
	4.1	Materials in contact with drinking water	2	
	4.2	Materials evaluation	4	
	4.3	Gas chromatography / mass spectroscopy (GC/MS) analysis	5	
5	Struc	tural performance	11	
	5.1	Structural integrity	11	
6	Minin	num performance requirements	15	
	6.1	TDS reduction		
	6.2	Performance indication	19	
	6.3	Flow control	23	
	6.4	Storage tanks		
	6.5	Evaporator chamber		
	6.6	Openings and rims (product water zone)	23	
	6.7	Entry ports		
	6.8	Waste connections		
	6.9	Product water dispensing outlets		
	6.10	Active agents and additives		
		5		
7	Elective performance claims – Test methods			
	7.1	Inorganic chemical reduction claims qualified by TDS surrogate testing		
	7.2	Inorganic chemical reduction		
	7.3	In-place sanitization of the product water zone		
	7.4	Microbiological reduction		
	7.5	Production rate verification		
8	Instru	uction and information	35	
	8.1	Installation, operation, and maintenance instructions	35	
	8.2	Data plate		
	8.3	Replacement components		
	8.4	Performance data sheet		
No		e Annex 1 Evaluation methods for systems with multiple technologies – Treatment train	41	
	N-1.1		4	
		technologies		
	N-1.2			
	N-1.3	Example application of treatment train option C	43	

Informative	Annex 1 Evaluation of total dissolved solids as a surrogate parameter for the			
	reduction of inorganic contaminants by distillation systems	45		
I-1.1	Executive summary	45		
I-1.2	Introduction			
I-1.3	Evaluation protocol			
I-1.4	Results			
I-1.5	Conclusions	50		
Informative	Annex 2 Key elements of a certification program for drinking water treatment			
	systems and components			
I-2.1	Marking the product			
I-2.2	Listing certified companies	51		
I-2.3	Annual audits	51		
I-2.4	Testing			
I-2.5	Toxicological evaluation of materials formulations			
I-2.6	Corrective action			
I-2.7	Enforcement			
I-2.8	Administrative review			
I-2.9	Appeals			
I-2.10	Complaints			
I-2.12	Records	53		
I-2.13	Public notice	53		
I-2.14	Confidentiality	53		
Informative Annex 3				
Interpretation Annex				

Foreword²

The purpose of this Standard is to establish minimum requirements for the materials, design and construction, and performance of point-of-use (POU) and point-of-entry (POE) drinking water distillation systems that are designed to reduce specific chemical and microbiological contaminants in public or private water supplies. NSF/ANSI 62 also specifies minimum product literature requirements that manufacturers shall provide to authorized representatives and consumers.

Water contact materials in drinking water treatment units listed under NSF/ANSI 42, NSF/ANSI 44, NSF/ANSI 53, NSF/ANSI 55, NSF/ANSI 58, and NSF/ANSI 62 are tested and evaluated under a separate protocol from NSF/ANSI/CAN 61, with criteria that were developed specifically for the intended end-use. NSF/ANSI/CAN 61 listing shall not be additionally required for acceptance of these listed units for water contact application.

This edition of the Standard contains the following revisions:

Issue 40

This revision clarifies the requirements for drinking fountains under the general performance requirements in Section 6. The ballot also revises the minimum air gap requirement for drinking fountain outlets from 2 inches to 1 inch to be aligned with other industry standards and codes.

Issue 42

This revision updates the minimum 2-L sample requirement to a recommendation in Section 4.2.3.

Issue 43

This revision corrects the improper use of requirements (i.e., "shall") in notes and corrects minor typos throughout the Standard.

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, PO Box 130140, Ann Arbor, Michigan 48113-0140, USA.

² The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.