



*NSF International Standard /
American National Standard*

NSF/ANSI 44 - 2018

Residential Cation Exchange Water Softeners



This is a preview. [Click here to purchase the full publication.](#)

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 Telex: 753215 NSF INTL
Fax: (734) 769-0109
E-mail: info@nsf.org
Web: www.nsf.org

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

Residential Cation Exchange Water Softeners

Standard Developer
NSF International

Designated as an ANSI Standard
July 31, 2018
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
December 1987

Revised November 1996
Revised May 2000
Revised February 2002
Revised October 2007
Revised December 2013
Revised January 2017

Revised November 1998
Revised November 2000
Editorial revision December 2003
Revised August 2009
Revised January 2015
Revised November 2017

Revised September 1999
Revised January 2001
Revised June 2004
Revised February 2012
Revised October 2015
Revised December 2018

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 44 –2018.”

Copyright 2019 NSF International

Previous editions ©2017, 2016, 2015, 2013, 2012, 2009, 2007, 2004, 2002, 2001, 2000, 1999, 1998, 1996,
1987

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.

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.

NSF Standards provide basic criteria to promote sanitation and protection of the public health. 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, local, state) 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.

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	General	1
1.1	Purpose.....	1
1.2	Scope	1
1.3	Alternate materials, design, and construction.....	1
1.4	Treatment train.....	1
2	Normative references	1
3	Definitions	2
4	Materials	2
4.1	Materials in contact with drinking water	2
4.2	Materials evaluation	3
4.3	Gas chromatography / mass spectroscopy (GC/MS) analysis	5
5	Structural performance	11
5.1	Structural integrity	11
6	Minimum performance requirements.....	17
6.1	Hazards.....	17
6.2	Waste connections.....	17
6.3	Brine tank.....	17
6.4	Operation	17
6.5	Performance indication	18
6.6	Chemical and mechanical performance	18
7	Elective performance claims – Test methods.....	31
7.1	Scope	31
7.2	Barium and radium reduction.....	34
7.3	Conformance by calculation	35
8	Instruction and information	38
8.1	Installation, operation, and maintenance instructions.....	38
8.2	Data plate.....	40
8.3	Performance data sheet	40
Annex A	Key elements of a certification program for drinking water treatment systems and components	43
A.1	Marking the product	43
A.2	Listing certified companies	43
A.3	Annual audits	43
A.4	Testing	44
A.5	Toxicological evaluation of materials formulations	44
A.6	Corrective action	44
A.7	Enforcement.....	44
A.8	Administrative review	44
A.9	Appeals	44

A.10 Complaints	45
A.11 Advertising	45
A.12 Records.....	45
A.13 Public notice.....	45
A.14 Confidentiality	45
Annex B.....	47
Annex C Evaluation methods for systems with multiple technologies – Treatment train.....	49
C.1 Requirements for the evaluation of a system containing multiple, sequential treatment technologies.....	49
C.2 Example application of treatment train option B	50
C.3 Example application of treatment train option C	51
Interpretation Annex.....	53