

NSF/ANSI 61 – 2004
Addendum 1.0 – 2004

Drinking water system components — Health effects

NSF International Standard/ American National Standard

Developed by a consortium of:

- NSF International
- The American Water Works Association Research Foundation
- The Association of State Drinking Water Administrators
- The American Water Works Association

With support from:

- The U.S. Environmental Protection Agency
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**NSF/ANSI 61 – 2004
Addendum 1.0 – 2004**

NSF International Standard/
American National Standard
for Drinking Water Additives —

**Drinking water system components —
Health effects**

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Foreword²

In response to a competitive request for proposals from the U.S. Environmental Protection Agency (USEPA), a Consortium led by NSF International (NSF) agreed to develop voluntary third-party consensus standards and a certification program for all direct and indirect drinking water additives. Other members of the Consortium include the American Water Works Association Research Foundation, the Association of State Drinking Water Administrators, the Conference of State Health and Environmental Managers, and the American Water Works Association. (COSHEM has since become inactive as an organization.) Each organization was represented on a steering committee with oversight responsibility for the administration of the cooperative agreement. The Steering Committee provides guidance on overall administration and management of the cooperative agreement. Currently, the member organizations remain active in an oversight role.

Two standards for additives products were developed. NSF/ANSI 60 – *Drinking water treatment chemicals — Health effects* covers many of the water treatment chemicals, also known as direct additives. This Standard, NSF/ANSI 61 – *Drinking water system components — Health effects*, covers all indirect additives products and materials. Testing to determine the potential of a product to impart taste and/or odor to drinking water is not included in this Standard.

NSF/ANSI 61 was developed to establish minimum requirements for the control of potential adverse human health effects from products that contact drinking water. It does not attempt to include product performance requirements that are currently addressed in other voluntary consensus standards established by such organizations as the American Water Works Association, the American Society for Testing and Materials, and the American National Standards Institute. Because this Standard complements the performance standards of these organizations, it is recommended that products also meet the appropriate performance requirements specified in the standards of such organizations.

NSF/ANSI 61, and subsequent product certification against it, has replaced the USEPA Additives Advisory Program for drinking water system components. USEPA terminated its advisory role in April 1990. For more information with regard to USEPA's actions, refer to the July 7, 1988 *Federal Register* (53FR25586).

This Standard and the accompanying text are intended for voluntary use by certifying organizations, utilities, regulatory agencies, and/or manufacturers as a basis of providing assurances that adequate health protection exists for covered products. Product certification issues, including frequency of testing and requirements for follow-up testing, evaluation, enforcement, and other policy issues, are not addressed by this Standard.

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

This addendum includes the following revisions:

- The roof (ceiling) area inside potable water tanks is considered a potable water contact area since water constantly condenses on the ceiling area of potable water tanks and drips back into the drinking water. A definition for potable water contact area for tanks has been incorporated into Definitions.
- Section 5, Normalization, has been adjusted accordingly to include the ceiling of potable water tanks when calculating the surface area to volume ratio.
- The surface area and surface area to volume ratio columns in Table 5.4 were updated.

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. As such, 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.

- Language has been incorporated into Section 7.5.4, Exposure water, and Annex B to standardize the age and storage of exposure waters.

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

Suggestions for improvement of this Standard are welcome. Comments should be sent to Chair, Joint Committee on Drinking Water Additives, c/o NSF International, Standards Department, PO Box 130140, Ann Arbor, Michigan 48113-0140, USA.

Revisions to NSF/ANSI 61 – 2004 are shown in this addendum as **crossouts** for deletions and **highlights** for additions.

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for Drinking Water Additives —

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5 Barrier materials

5.1 Scope

The requirements of this section apply to products and materials intended to form a barrier providing containment of drinking water or to prevent drinking water contact with another surface. The products and materials that are covered include, but are not limited to: non-residential storage tanks, coatings, paints, linings and liners, bladders, diaphragms, and constituents of concrete and cement-mortar (e.g., Portland and blended hydraulic cements, admixtures, sealers, and mold release agents). These products and materials can be field-applied, factory-applied, precast, or cast in place.

5.2 Definitions

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5.2.13 potable water contact area of tanks: The potable water contact areas of tanks shall include both the area normally submerged during use as well as the areas where water may condense and fall back into the tank such as ceilings.

5.2.14 sealer: A liquid that is applied as a coating to the surface of hardened concrete or cement-mortar, either to prevent or decrease the penetration of liquid or gaseous media during service exposure.

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5.7 Normalization

5.7.1 Normalization for tanks/storage vessels

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5.7.1.2 Calculation of the surface area-to-volume ratio for tanks or storage vessels

The following assumptions shall be used in determining the surface area-to-volume ratio for each nominal tank capacity:

- the tank has a smooth interior surface;
- the tank is cylindrical in shape;
- the tank is installed in a vertical position; and
- the roof (**ceiling**) ~~or top~~ of the tank is ~~not~~ in contact with drinking water.

The following equation shall be used to calculate the surface area-to-volume ratio for tanks or storage vessels of capacities that do not appear in table 5.4: