NSF Standard(s) Impacted: NSF/ANSI 61

Background:

While Section 9 of NSF/ANSI 61 contains a requirement for testing a minimum of three units, there is no minimum sample size for in-line devices evaluated under Section 8. One recommendation of the Water Research Foundation project “Is NSF 61 Relevant for Chloraminating Facilities?” is that the standard would be improved by mandating a sample size greater than one. A Task Group on Section 8 Variability was established to consider the recommendation and propose revision(s) as needed to address it.

Attached is a proposed revision being considered by the task group. At this point it is just a draft, but provides an indication of the approach being considered.

Initial feedback is desired from the NSF 61 Joint Committee.

Recommendation:

Draft recommendation attached.

Supplementary Materials (photographs, diagrams, reports, etc.):

None:

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Signature*: Peter Greiner
Company: NSF International
Telephone Number: 734-769-5517 E-mail: greinerp@nsf.org
Submission Date: 03/2013

*Type written name will suffice as signature
Proposed revision to address variability of lead release for in-line devices

**NSF/ANSI Standard 61**  
for Drinking Water Additives –

**Drinking water system components —**
Health effects

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8 Mechanical devices

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8.3 Device, component, or material requirements

8.3.1 General

Devices, components, or materials shall be considered to have met the requirements of this section if at least one of the following conditions is met:

- the devices, components, or materials covered under this section are tested and evaluated according to the procedures specified in Annex B, sections B.4 and B.8; or
- the devices, components, or materials meet the requirements of 8.3.2.

When all components or materials, or both, of a device meet the requirements of this section, the device shall also meet the requirements of this section. When all materials of a component meet the requirements of this section, the component shall also meet the requirements of this section.

8.3.2 Evaluation of devices, components, or materials tested to other sections of this Standard

Devices, components, or materials that have been tested to other sections of the Standard shall meet the following criteria:

- they shall be made of the same alloy(s), composition(s), or formula(s);
- they shall have undergone analogous manufacturing processes;
- they shall have been tested at a temperature that meets or exceeds the required exposure temperature in Annex B, section B.4;
- they shall have been conditioned for a period of time not more than 14 d, and exposed for a period of time not less than 12 h for in-line devices or 24 h for other mechanical devices; and
- the concentration(s) of the extracted contaminant(s) shall be normalized to the requirements of Annex B, section B.8.
8.3.3 Metallic contaminants

When a device or component is qualified through the separate testing of two or more components, the normalized concentrations for each specific metallic contaminant from individual components shall be summed. The total of the normalized metallic contaminant concentrations shall meet the requirements of Annex B, section B.8.

8.4 In-line devices, components, and materials

Samples for the testing of in-line devices, components, and materials (see 8.1) shall be selected according to the requirements of Annex B, sections B.2.3 and B.4.1. Extraction waters shall be selected according to Annex B, section B.2.5. In-line product samples shall be conditioned as indicated in Annex B, section B.4.3. After conditioning, the samples shall be exposed as indicated in Annex B, section B.4.4.1 and Table B8. Normalization shall be as specified in Annex B, sections B.8.3 and B.8.4, as applicable.

8.4.1 Brass or bronze containing in-line devices

In-line devices that incorporate wetted surfaces made of brass or bronze shall be exposed in at least triplicate if the test representative holds less than or equal to 2 L and has a dry weight less than or equal to 15 kg (33 lbs). The extraction waters from triplicate exposures shall be either combined to one sample for all contaminant analysis or shall be analyzed individually and results averaged. If more than three samples are exposed, the waters from each sample shall be analyzed individually for lead and results averaged. Averaging of results shall be performed prior to normalization. When one or more of the individual results is found to be non-detectable, the reporting limit shall be used to represent the unit results when averaging. The normalized average result for lead shall be less than or equal to the TAC (5 ug/L). In addition, the normalized lead results of individual units exposed shall not exceed 15 ug/L.

Note: With this procedure, the average result is used when determining compliance with the standard for all contaminants. It also assures no individual unit exposed exceeds the standards lead criteria in effect prior to July 1, 2012 for in-line devices (15 ug/L).

Rationale: A minimum of triplicate analysis is added to the standard as a measure to address the potential variability in lead release from brass and bronze alloys. It also allows a greater number of samples to be evaluated if requested by the manufacturer, but adds a requirement that no individual unit can exceed 15 ug/L.

8.5 Point-of-entry systems, components, and media

8.5.1 Point-of-entry systems

Samples for the testing of point-of-entry systems shall be selected according to the requirements of Annex B, sections B.2.3 and B.4.1. Extraction waters shall be selected according to Annex B, section B.2.5. Samples shall be installed, conditioned, and exposed as indicated in Annex B, section B.4.4.2 Normalization shall be as specified in Annex B, sections B.8.3 and B.8.4, as applicable.

8.5.2 Point-of-entry system components and materials

The evaluation of point-of-entry components that require exposure under pressure to ensure evaluation of all normally wetted surfaces shall be performed according to 8.5.1.
For all other point-of-entry components and materials, samples for the testing shall be selected according to the requirements of Annex B, sections B.2.3 and B.4.1. Extraction waters shall be selected according to Annex B, section B.2.5. Samples shall be conditioned as indicated in Annex B, section B.4.3. Following conditioning, the samples shall be exposed as indicated in Annex B, section B.4.4. Normalization shall be as specified in Annex B, sections B.8.3 and B.8.4, as applicable.

Brine systems and brine system components (e.g., brine tanks, salt grids float valves) of point-of-entry systems shall not require extraction testing.

8.5.3 Point-of-entry system media

Media used in point-of-entry systems submitted for evaluation separately from a complete point-of-entry system shall be evaluated to the requirements of 7. Media used in point-of-entry systems submitted for evaluation as part of a complete point-of-entry system shall be evaluated to the requirements of 8.5.1.

Evaluations of softener regeneration salts are performed under NSF/ANSI 60: Drinking water treatment chemicals – Health effects.

8.6 Chemical feeders and generators

Samples for the testing of chemical feeders and generators shall be selected according to the requirements of Annex B, sections B.2.3 and B.4.1. Chemical feeder and generator samples shall be conditioned as indicated in Annex B, section B.4.3. Following conditioning, the samples shall be exposed as indicated in Annex B, section B.4.4.3. Normalization shall be as specified in Annex B, section B.8.5.

8.6.1 Solid Chemical Feeders

Solid chemical feeders shall be evaluated only with the specific types of chemical formulations and forms that are recommended by the feeder manufacturer. The specific chemical formulation shall also comply with the requirements of NSF/ANSI 60: Drinking Water Treatment Chemicals – Health Effects. The manufacturer shall include information regarding the specific chemical and form for which the product is certified and shall also include a warning in their installation, maintenance and operating instructions or dataplate, regarding the dangers of misuse that could result from using the wrong chemical or form, and whether or not such use would render the warranty invalid.

8.7 Other mechanical devices, components, and materials

Samples for the testing of all other mechanical devices, components, and materials shall be selected according to the requirements of Annex B, sections B.2.3 and B.4.1. Extraction waters shall be selected according to Annex B, section B.2.5. Other mechanical product samples shall be conditioned as indicated in Annex B, section B.4.3. Following conditioning, the samples shall be exposed as indicated in Annex B, section B.4.4.2 and Table B9. Normalization shall be as specified in Annex B, sections B.8.3, B.8.4, and B.8.6, as applicable.