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Joint Committee on Drinking Water Additives – System Components

4/26/2024

Proposed revision to NSF/ANSI/CAN 61 – Drinking Water System Components – Health Effects (61i183r1)

Revision 1 of NSF/ANSI/CAN 61, issue 183 is being forwarded to the Joint Committee for consideration. Please review the proposal and **submit your ballot by May 17, 2024** via the NSF Online Workspace.

Please review all ballot materials. When adding comments, please include the section number applicable to your comment and add all comments under one comment number whenever possible. If you need additional space, please use the attached blank comment template in the reference documents and upload online via the browse function.

Purpose

The proposed revision will clarify the normalization factor in Section 4.7.4 of NSF/ANSI/CAN 61.

Background

At the 2023 JC meeting on DWA-SC a task group was formed to review the normalization factor (NF) in Section 4 of NSF/ANSI//CAN 61. When calculating the normalization factor for a product, clause N-1.8.3.1 states that "the N2 term shall always equal one when calculating normalized static concentrations." N2 is calculated using the Vf(static) and Vf(flowing) values and the result is used to determine whether static or flowing conditions are the worst case. If static conditions are found to be worst-case, the N2 is assigned a value of one and the final NF is then calculated.

However, the normalization instructions for Section 4 are found in Section 4.7 rather than Annex N-1 and there is no mention in Section 4.7 of assigning a value of one to N2 when calculating normalized static conditions, even though the examples and guidance in the related tables (e.g. 4.4, 4.6, N-1.11) suggest that N2 is to be assigned a value of one under static conditions. It was noted by the task group that there seem to be inconsistencies among certifiers regarding this matter and the need for clarification.

If you have any questions about the technical content of the ballot, you may contact me in care of:

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[Note – the recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by grey highlighting. Rationale Statements are in *italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI/CAN Standard
for Drinking Water Additives –

Drinking Water System Components – Health Effects

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4 Pipes and related products

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4.7 Normalization of contaminant concentrations

4.7.1 General

The concentration of analytes detected in the extraction water shall be multiplied by a calculated normalization factor (*NF*) to account for differences between laboratory and field surface area-to-volume ratios. The normalization factor shall be based on calculations and assumptions relevant to the end use of the product.

The general formula for the derivation of the normalization factor is described in the following equations:

$$NF = N1 \times N2$$

$$N1 = \frac{SA_F}{SA_L} \times \frac{V_L}{V_{F(static)}}$$

$$N2 = \frac{V_{F(static)}}{V_{F(flowing)}}$$

where:

SA_F = surface area exposed in the field

SA_L = surface area exposed in the laboratory

V_L = volume of extraction water used in the laboratory

$V_{F(static)}$ = volume of water to which the product is exposed under static conditions

$V_{F(flowing)}$ = volume of water to which the product is exposed under flowing conditions during a period of time equivalent to the laboratory test

When the length of the exposure being normalized is other than 16 h in length, the normalized value shall be adjusted to reflect a 16-h exposure (e.g., multiply the normalized value by 0.7 when a 24-h exposure was used). The nominal diameter of the product shall determine which assumptions are used for normalization (see Tables 4.4 and 4.5). The actual inner diameter of the product shall be used for the normalization calculations of surface area and volume.

NOTE — Adjustment of the normalized contaminant concentration for the duration of the exposure period shall consider the extraction kinetics of the contaminant under evaluation. For contaminants that do not exhibit linear extraction kinetics, adjustment for the duration of exposure shall be done in accordance with the demonstrated kinetics of the contaminant or shall not be applied if this information is not available.

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4.7.4 Selection of normalization conditions

Pipe and fitting products with a nominal diameter ≥ 10 cm (4 in) shall be normalized to the flowing condition. Pipe and fitting products with a nominal diameter of < 10 cm (4 in) shall be normalized to the static condition when the value of N2 is ≤ 0.1. Pipe and fitting products with a nominal diameter of < 10 cm (4 in) shall be normalized to the flowing condition when the value of N2 is > 0.1. The N2 term shall always equal one when calculating normalized static concentrations.

Rationale: Adds language to eliminate confusion for normalization factors in section 4 and makes calculations consistent with other sections.