Summary of Substantive Changes between the
2020 and the 2021 editions of

NSF/ANSI/CAN 60 "Drinking Water Treatment Chemicals – Health Effects"

Presented to the IAPMO Standards Review Committee on December 13, 2021

General: The changes to this standard should not have an impact on currently listed products. The substantive changes are:

- Revised Chemical equations for clarification in multiple sections (see Sections 4.7.1, 4.7.2, 5.7, 6.7, 7.7, and 8.7)
- Expanded the disinfection and oxidation products to add sodium dichloroisocyanurate, trihloroisocyanuric acid and sodium permanganate, and a footnote for clarification (see Table 6.2)

4.7.1 Nonpolymer chemicals:
The concentration of contaminants detected in the analysis solution shall be adjusted to reflect the contaminant concentration in the finished drinking water according to the following equation:

~~contaminant (mg)~~ / ~~analysis solution (L)~~	~~×~~	~~analysis solution (L)~~ / ~~product (mg)~~	~~×~~	~~product (mg)~~ / ~~drinking water (L)~~	~~=~~	~~contaminant (µg)~~ / ~~drinking water (L)~~
~~[analysis solution]~~		~~[lab prep solution]~~		~~[MUL]~~		~~[at-the-tap exposure]~~
[analysis result] contaminant (µg)	×	[lab prep volume] lab solution (L)	×	[MUL] product (mg)	=	[at-the-tap exposure] normalized contaminant (µg)
lab solution (L)		product (mg)		drinking water (L)		drinking water (L)

4.7.2 Polymer chemicals
The concentration of contaminants detected in the analysis solution shall be adjusted to reflect the contaminant concentration in the finished drinking water according to the following equation:

~~contaminant (µg)~~ / ~~product (g)~~	~~×~~	~~1 g~~ / ~~1,000 mg~~	~~×~~	~~product (mg)~~ / ~~drinking water (L)~~	~~=~~	~~contaminant (µg)~~ / ~~drinking water (L)~~
~~[analysis solution]~~		~~[lab prep solution]~~		~~[MUL]~~		~~[at-the-tap exposure]~~
[analysis result] contaminant (µg)	×	[conversion factor] 1 g	×	[MUL] product (mg)	=	[at-the-tap exposure] contaminant (µg)
product (g)		1,000 mg		drinking water (L)		drinking water (L)

5.7 Normalization

The concentration of contaminants detected in the analysis solution shall be adjusted to reflect the contaminant concentration in the finished drinking water according to the following equation:

~~contaminant (mg)~~ / ~~solution (L)~~	×	~~analysis solution (L)~~ / ~~product (g)~~	×	~~1g~~ / ~~1,000 mg~~	~~1,000 µg~~ / ~~1 mg~~	=	~~contaminant (µg)~~ / ~~drinking water (L)~~
~~[analysis solution]~~		~~[lab prep solution]~~			~~[MUL]~~		~~[at-the-tap exposure]~~

[analysis result] contaminant (µg) / lab solution (L)	×	[lab prep volume] lab solution (L) / product (mg)	×	[MUL] product (mg) / drinking water (L)	=	[at-the-tap exposure] normalized contaminant (µg) / drinking water (L)

6.7 Normalization

The concentration of contaminants detected in the analysis solution shall be adjusted to reflect the contaminant concentration in the finished drinking water according to the following equation:

~~contaminant (mg)~~ / ~~solution (L)~~	×	~~analysis solution (L)~~ / ~~product (g)~~	×	~~1g~~ / ~~1,000 mg~~	~~product (mg)~~ / ~~drinking water (L)~~	~~1,000 µg~~ / ~~1 mg~~	=	~~contaminant (µg)~~ / ~~drinking water (L)~~
~~[analysis solution]~~		~~[lab prep solution]~~			~~[MUL]~~	~~[at-the-tap exposure]~~		

[analysis result] contaminant (µg) / lab solution (L)	×	[lab prep volume] lab solution (L) / product (mg)	×	[MUL] product (mg) / drinking water (L)	=	[at-the-tap exposure] normalized contaminant (µg) / drinking water (L)

7.7 Normalization

The concentration of contaminants detected in the analysis solution shall be adjusted to reflect the contaminant concentration of the finished drinking water according to the following equation ([analysis solution] × [lab prep solution] × [(MUL) × (MUL) × (MUL)] = [at-the-tap exposure]):

~~contaminant (mg) / solution (L)~~ × ~~analysis solution (L) / product (g)~~ × ~~1g / 1,000 mg~~ ~~product (mg) / drinking water (L)~~ ~~1,000 µg / 1 mg~~ = ~~contaminant (µg) / drinking water (L)~~

~~[analysis solution]~~ ~~[lab prep solution]~~ ~~[MUL]~~ ~~[at-the-tap exposure]~~

[analysis result] contaminant (µg) / lab solution (L) × [lab prep volume] lab solution (L) / product (mg) × [MUL] product (mg) / drinking water (L) = [at-the-tap exposure] normalized contaminant (µg) / drinking water (L)

8.7 Normalization of contaminant concentrations

8.7.1 General

The concentration of the product's active ingredient(s) and any contaminants detected in the analysis solution shall be adjusted to reflect the concentration in the finished drinking water when the product is used in accordance with the manufacturer's use instructions. When appropriate, the applicant shall provide data, which define the decay curve for removal of the product from the water supply system when the manufacturer's recommended flushing procedures are utilized.

The following equation shall be used to calculate contaminant concentrations for products other than those specified in Sections 8.7.2, 8.7.3, 8.7.4, and 8.7.5:

~~laboratory contaminant concentration~~ × ~~analysis solution (L) / product (g)~~ × ~~1g / 1,000 mg~~ ~~product dosage (mg/L)~~ = ~~normalized contaminant concentration drinking water (L)~~

[analysis result] contaminant (µg) / lab solution (L) × [lab prep volume] lab solution (L) / product (mg) × [product dosage/residual] Product (mg) / drinking water (L) = [at-the-tap exposure] normalized contaminant (µg) / drinking water (L)

Table 6.2, Disinfection and oxidation products – Product identification, and evaluation: The table was revised to add sodium dichloroisocyanurate, trihloroisocyanuric acid and sodium permanganate and the following footnote:

[14] The 30 mg/L value in the typical use level column represents the MUL based on an anhydrous solid and a SPAC of 20 mg/L for isocyanuric acid.