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Joint Committee on Drinking Water Additives – System Components

April 29, 2024

Proposed revision to NSF/ANSI/CAN 61 – Drinking Water System Components – Health Effects (61i179r2)

Revision 2 of NSF/ANSI/CAN 61, issue 179 is being forwarded to the Joint Committee for consideration. Please review the proposal and **submit your ballot by May 20, 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 add seven (7) brass rod alloys to the NSF/ANSI/CAN 61 Annex N-2 list of 'Acceptable Materials' for all regulated metals and applicable sections of the Standard (*i.e.,* Sections 4, 8 and 9). **Revision 2** addresses a comment received to clarify the associated manufacturing process. Please see the original comment and response under the reference items.

Please note that if you do not return a vote in this Revision 2 ballot, your original vote will remain in effect.

Background

On November 30, 2023, Copper Development Association (CDA) presented an issue paper to the NSF Joint Committee on Drinking Water Additives – System Components proposing to add seven (7) brass rod alloys to a new table in Annex N-2 for 'Acceptable Materials'. The issue paper was supported by a robust testing program which evaluated the leaching performance of the same seven (7) alloys currently listed in Annex N-2 for Section 9 devices and lead leaching only against the remaining, non-lead regulated metals, and against additional sections of the Standard relevant to brass and bronze alloys (i.e., Sections 4 and 8).

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. Revision 2 changes are indicated by yellow 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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Normative Annex 2

Acceptable materials

N-2.1 Purpose

This annex defines the evaluation process for materials that have been submitted for qualification as acceptable materials.

N-2.2 Evaluation of acceptable materials

A material shall be designated as an "acceptable material" in Table N-2.1 if it has a standard material formulation or specification (e.g., ASTM); has undergone extraction testing that demonstrates that the material does not contribute any contaminant in excess of its acceptable level as determined by this standard (see Section N-2.3); and is accompanied by adequate documentation (see Section 3.4).

N-2.2.1 Acceptable materials for mechanical plumbing devices – Lead leaching only

Materials included in Table N-2.2 have been tested for compliance according to Section 9 requirements, but not for compliance under any other section of the standard or for nonlead analytes and therefore may be subject to additional testing outlined in this standard. The brass alloys included in Table N-2.2 have demonstrated compliance with the lower lead leaching criteria for Section 9 endpoint devices in Section 9.5.1.1 when used within the operating parameters defined in the table.

N-2.2.2 Acceptable materials for mechanical devices and pipes and related products evaluated against TAC pass/fail limits.

Materials included in Table N-2.3 have been tested for compliance according to Section 4 and 8 requirements. The brass rod alloys included in Table N-2.3 produced via hot extrusion or continuous casting have demonstrated compliance with the relevant regulated metal leaching criteria for Section 4 and 8 applications where the TAC pass/fail limit is applicable when used within the operating parameters defined in the table. Additional testing outlined in this standard is required for applications made from these

materials that fall outside the scope defined in Table N-2.3.

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Table N-2.3
Acceptable materials for mechanical devices and pipes and related products evaluated against TAC pass/fail limits

Material	Specific designation	Standard (product) reference	Surface area-to-volume ratio	End use temperature	Percent Composition
brass	UNS C27250	—	35 in^2/L (226 cm^2/L)	23 °C (73 °F)	copper (62.0 to 65.0) lead (0.009 max.) iron (0.35 max.) phosphorous (0.05 to 0.40) carbon (0.20 to 1.2) bismuth (0.009 max.) silicon (0.009 max) zinc (balance)
	UNS C27550	—	35 in^2/L (226 cm^2/L)	23 °C (73 °F)	copper (60.0 to 63.0) lead (0.04 max.) iron (0.35 max.) phosphorous (0.40 max.) carbon (0.20 to 1.2) bismuth (0.009 max.) silicon (0.009 max) zinc (balance)
	UNS C49100	—	35 in^2/L (226 cm^2/L)	23 °C (73 °F)	copper (85.5 to 87.5) lead (0.09 max.) tin (0.30 max.) iron (0.30 max.) phosphorous (0.10 max.) tellurium (0.30 to 0.9) nickel (0.30 max.) zinc (14.5 max.)
	UNS C69300	ASTM B124 ASTM B283 ASTM B371	35 in^2/L (226 cm^2/L)	23 °C (73 °F)	copper (73.0 to 77.0) lead (0.09 max.) tin (0.20 max.) iron (0.10 max.) phosphorous (0.04 to 0.15) nickel (0.10 max. manganese (0.10 max.) silicon (2.7 to 3.4) zinc (balance)

Table N-2.3
Acceptable materials for mechanical devices and pipes and related products evaluated against TAC pass/fail limits

Material	Specific designation	Standard (product) reference	Surface area-to-volume ratio	End use temperature	Percent Composition
	UNS C69850	ASTM B124 ASTM B283 ASTM B371	35 in^2/L (226 cm^2/L)	23 °C (73 °F)	copper (67.5 to 69.0) lead (0.09 max.) tin (0.20 max.) iron (0.10 max.) phosphorous (0.04 to 0.15) nickel (0.10 max.) manganese (0.10 max.) silicon (1.53 to 2.0) zinc (balance)
	UNS C89833 (continuous cast rod only)	—	35 in^2/L (226 cm^2/L)	23 °C (73 °F)	copper (86.0 to 91.0) lead (0.09 max.) tin (4.0 to 6.0) iron (0.30 max.) phosphorous (0.050 max.) nickel (1.0 max.) aluminum (0.005 max.) bismuth (1.7 to 2.7) sulfur (0.08 max.) antimony (0.25 max.) silicon (0.005 max.) zinc (2.0 to 6.0)
	UNS C89835 UNS C89833 (continuous cast rod only)	—	35 in^2/L (226 cm^2/L)	23 °C (73 °F)	copper (85.0 to 89.0) lead (0.09 max.) tin (6.0 to 7.5) iron (0.20 max.) phosphorous (0.10 max.) nickel (1.0 max.) aluminum (0.005 max.) bismuth (1.7 to 2.7) sulfur (0.08 max.) antimony (0.35 max.) silicon (0.005 max.) zinc (2.0 to 4.0)