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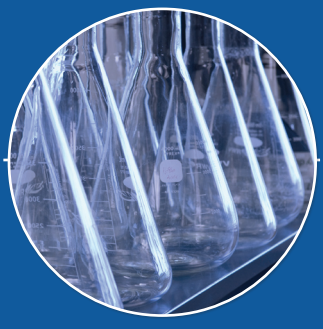
NSF/ANSI/CAN 600 - 2018

Health Effects Evaluation and Criteria for Chemicals in Drinking Water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NSF International Standard /
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National Standard of Canada
for Drinking Water Additives –

Health Effects Evaluation and Criteria for Chemicals in Drinking Water

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Contents

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Foreword[2]

The purpose of this Standard is to define the toxicological review and evaluation procedures for the evaluation of substances imparted to drinking water through contact with drinking water system components (and drinking water additives). It is intended to establish the human health risk, if any, of the substances imparted to drinking water under the anticipated use conditions of the product. Table 4.1 contains evaluation criteria for the determination of product compliance to the health effects requirements of drinking water standards in which this Standard is cited, including NSF/ANSI/CAN 60 and NSF/ANSI/CAN 61. This information was previously published under NSF/ANSI 60, Annexes A and C, and NSF/ANSI 61, Annexes A and D. In 2018, NSF/ANSI/CAN 600 was developed to increase the accessibility of this information and create a single source for the multiple drinking water standards that reference these criteria.

This Standard was developed by the NSF Joint Committees on Drinking Water Additives using the consensus process described by the American National Standards Institute and the Standards Council of Canada's *Requirements and Guidance*. At the time of approval, the Joint Committees consisted of 18 public health / regulatory, 21 industry, 10 product certifier / testing lab, and 16 user representatives.

This Standard has been designated as a National Standard of Canada (NSC) in compliance with requirements and guidance set out by the Standards Council of Canada (SCC).

Suggestions for improvement of this Standard are welcome. This Standard is maintained on a Continuous Maintenance schedule and can be opened for comment at any time. Comments should be sent to: Chair, Joint Committees on Drinking Water Additives at standards@nsf.org, or c/o NSF International, Standards Department, PO Box 130140, Ann Arbor, Michigan 48113-0140, USA.

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NSF/ANSI/CAN Standard
for Drinking Water Additives –

Health Effects Evaluation and Criteria for Chemicals in Drinking Water

1 General

1.1 Purpose

The following information defines the toxicological review and evaluation procedures for the evaluation of substances imparted to drinking water through contact with drinking water system components (and drinking water additives). It is intended to establish the human health risk, if any, of the substances imparted to drinking water under the anticipated use conditions of the product. Table 4.1 of this Standard contains evaluation criteria that have been determined according to the requirements of this Standard.

2 Definitions

2.1 benchmark dose (BMD): The lower 95% confidence limit on the dose that would be expected to produce a specified response in X% of a test population. This dose may be expressed as BMD_X (adapted from Barnes et al., 1995).

NOTE — For the purposes of this Standard, the BMD shall be calculated at the 10% response level.

2.2 continuous data: A measurement of effect that is expressed on a continuous scale, e.g., body weight or serum enzyme levels (US EPA, 1995).

2.3 critical effect: The first adverse effect, or its known precursor, that occurs as the dose rate increases (US EPA, 1994).

2.4 ED_{10}: Effective dose 10; a dose estimated to cause a 10% response in a test population (US EPA, 1996a).

2.5 genetic toxicity: Direct interaction with DNA that has the potential to cause heritable changes to the cell.

2.6 health hazards, types of: (US EPA, 1994 and 1999).

2.6.1 acute toxicity: Effects that occur immediately or develop rapidly after a single administration of a substance. Acute toxicity may also be referred to as immediate toxicity.

2.6.2 allergic reaction: Adverse reaction to a chemical resulting from previous sensitization to that chemical or to a structurally similar one.

2.6.3 chronic effect: An effect that occurs as a result of repeated or long-term (chronic) exposures.