American Water Works Association

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Erratum to
ANSI/AWWA B702-06
Standard
for

Sodium Fluorosilicate

(March 2006)

1. On page 7, Eq 3 should read:

$$\frac{\text{mL NaOH} \times N \times 0.047}{\text{weight of sample (g)}} \times 100 \text{ percent} = \text{percent } Na_2SiF_6 \qquad \text{(Eq 3)}$$

$$\text{percent } Na_2SiF_6 \times 0.606 = \text{percent F}$$

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American Water Works Association

The Authoritative Resource on Safe Water[SM]

ANSI/AWWA B702-06
(Revision of ANSI/AWWA B702-99)

AWWA Standard

Sodium Fluorosilicate

American National Standards Institute

Effective date: March 1, 2006.
First edition approved by AWWA Board of Directors May 27, 1954.
This edition approved Feb. 12, 2006.
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Foreword

This Foreword is for information only and is not a part of ANSI/AWWA B702.

I. Introduction.

I.A. *Background.* Sodium fluorosilicate (Na_2SiF_6) is one of several compounds presently being added to drinking water to reduce the incidence of dental caries. Since the first fluoridation installations during 1945, studies have shown that dental decay can be reduced by 20 to 40 percent among children who have consumed fluoridated water since birth.

Sodium fluorosilicate is a white or yellowish-white, slightly hydroscopic, crystalline powder with limited solubility in water. Although odorless, it has an acid taste. Sodium fluorosilicate has no true melting point, but decomposition begins at about 500°C (932°F) with the formation of silicon tetrafluoride. Its molecular weight is 188.05, and its specific gravity is 1.36. At 0°C (32°F), solubility is 0.43 g/100 mL water and increases to 2.45 g/100 mL water at 100°C (212°F). It hydrolyzes in water to form a solution with a pH between 3.5 and 4.0. Sodium fluorosilicate is manufactured principally from fluorosilicic acid.

Sodium fluorosilicate is fed into the water using mechanical feeders designed for this purpose. The feeders are equipped with solution tanks that should completely dissolve the compound before its introduction into the water. Liquid proportioning of solutions is rarely used because of the difficulty in making constant-strength solutions. It is not recommended to feed slurries (solutions containing undissolved particles) because of the resulting variations in fluoride levels.

Refer to AWWA Manual M4, *Water Fluoridation Principles and Practices,*[*] for additional technical information concerning the application and use of sodium fluorosilicate.

I.B. *History.* This standard was first published in the August 1954 issue of *Journal AWWA* as tentative, having been approved on May 27, 1954, by the AWWA Board of Directors. Subsequent editions were approved on May 15, 1960; Jan. 24, 1971; Jan. 30, 1984; Jan. 29, 1989; Jan. 30, 1994; and June 20, 1999. This eighth edition was prepared by the AWWA Standards Committee on Fluorides and approved on Feb. 12, 2006.

[*]AWWA Manual M4, *Water Fluoridation Principles and Practices,* AWWA, Denver, Colo.

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